Medical Lib.

APR 14 1927

The

British Medical Journal

THE JOURNAL OF THE BRITISH MEDICAL ASSOCIATION.

Including an Epitome of Current Medical Literature

WITH SUPPLEMENT.

No. 3456. SATURDAY, APRIL 2, 1927. **Price 1/3**

AN ESSENTIAL ELEMENT IN THE TREATMENT OF COLITIS

IN A RECENT ADDRESS on colitis, delivered before the Royal Society of Medicine, the distinguished lecturer, after stating that "there is no evidence that any so-called intestinal antiseptic, when given by the mouth, exerts any action on the colon," urges that every patient who has ever had colitis should "for the rest of his life," keep his stools soft by means of saline aperients or paraffin.

The usual mineral and vegetable purgatives, acting, as they do, by irritating the nervous mechanism of the intestinal lining cells, are clearly contra-indicated.

No aperient is more suitable for continued use than is ENO's "Fruit Salt." This effervescent saline, acting as it does solely by increasing the watery content of the bowel, is entirely free from all irritating or disintegrating effect on the lining of the intestine or on normal mucous secretion. Hence absolute painlessness and complete freedom from nausea mark its action. Of a few other aperients can this be said.

ENO'S FRUIT SALT

"THE PANEL DOCTOR'S POCKET BOOK"

The Proprietors of ENO's "Fruit Salt" will deem it a privilege to send to any member of the Medical Profession a copy of the latest addition to their series of Pocket Remembrancers. This new publication contains in a concise yet comprehensive form much useful information regarding panel practice and its many intricate details, and will be sent with or without a trial bottle of their preparation, as desired.

J. C. ENO LTD VICTORIA EMBANKMENT LONDON E.C.4

BRANDY for ILLNESS means MARTELL

A Necessity in The Hospital The Nursing Home The Sick Room

Invaluable to The Physician The Surgeon The Patient.

Inspection!

C. F. THACKRAY ▾ PARK STREET, LEEDS ▾ 119 HIGH HOLBORN, LONDON, W.C.I

A Clinical Address ON SOME VARIETIES OF HEADACHE.*

BY

LORD DAWSON OF PENN, G.C.V.O., K.C.B., M.D., F.R.C.P.

IN the address I have the honour to present to you to-night I propose to deal with certain forms of headache which, however distressing, are compatible with, and often characterize, an active life. That is to say, I am excluding from my purview the headache, on the one hand, of structural diseases such as nephritis and intracranial tumour, and, on the other hand, the headache which is a feature of certain infections.

Headache is a term of variable significance—the variability in its intensity suggests the best classification of pain with which I am acquainted—namely, (1) pain which one can forget, (2) pain which one cannot forget, and (3) pain which makes one forget everything else. Moreover, its character varies: it may be described as pain; as unbearable pressure; as throbbing, splitting; as a band of compression.

The origin of headache must lie in structures which are sensitive to pain. The dura mater and its extensions like the falx cerebri and the tentorium and the anterior two-thirds of the scalp are supplied by the trigeminal nerves. The posterior region of the scalp and the dura of the posterior fossa are supplied by sensory fibres coming from the upper cervical segments. Tension or stretching of the dura would, as in the case of the parietal peritoneum, produce pain, whereas the brain, like the intestines, is insensitive.

How is this tension set up? The skull is a rigid container which closely fits the brain, and the spare space for the expansion of the latter is strictly limited. If for any reason the spare space is inadequate for the brain expansion, it is suggested that tension results and pain may follow, referred to within the cranium, and, it may be, the scalp. The expansion may be produced by increasing the arterial inflow or retarding the venous outflow or by a swelling of the brain substance (an oedema). Sudden exertion will produce arterial flushing, and lowering the head below the level of the body venous engorgement.

By others it is thought that vasomotor instability is the cause of headache attacks—that is, spasm of cerebral arteries followed by dilatation. Widespread and obvious vasomotor disturbance occurs in many cases of headache; contraction and dilatation of the retinal arteries have been observed during attacks of migraine. Moreover, the pinched features, the cold nose and extremities observed before an attack, followed by polyuria as the attack eases, are suggestive of a vasomotor causal factor. Spasm of arteries offers some sort of explanation of localization of headache to one side of the head, or to the frontal, temporal, or occipital regions, and such phenomena as hemianopia and rarer manifestations of migraine like aphasia and paresis. The difficulty is that there is experimental evidence that the cerebral arteries are unresponsive to vaso-constrictor and vaso-dilator impulses.

We must admit that the precise mode of production of headache baffles us. Any valid explanation must account for its occasional rapid appearance and disappearance. I may exemplify this by the quick onset of headache from sudden anxiety and the rapid disappearance after evacuation of the colon.

In one's doubts as to pathogenesis there is a tendency to fall back on the endocrine system. There is no direct evidence of the latter's share in this problem, unless perhaps in relation to pituitary headache. The ductless glands do, however, seem to be a liaison between bodily and mental functions, and with headache this interaction is frequently seen. It is possible that the mechanism of headache may be set in motion by chemical rather than nervous stimuli.

The incidence of headache is variable. On the one hand there is the man of middle or old age who has never had a headache, and on the other hand the subject who seldom goes two or three days without one. Between these two extremes there is every variation. And this leads to the reflection that headache cannot be taken only as a measure of functional defect, but also as a feature of the patient's make-up or individuality; it is his reaction to environment. The same chain of events will lead to severe headache in one patient, slight headache in another, and in yet another no headache at all. Headache is like hyperpiesis: both are different varieties of responsiveness, of inborn trends which will develop or no according to the career of the possessor.

Given the innate nervous state with its characteristic impressionability and, with this, a responsible anxious life or such accessory factors as eye-strain, digestive or metabolic faults, and migraine will be your portion: you are a victim of physiological predestination.

If we call to mind cases of headache which fall into my category—namely, those which are compatible with and often characterize an active life—either they accord with the classic descriptions of migraine, or are associated with disorders of the alimentary tract, or are the result of physical or mental exhaustion, of anxiety states, or other psychical conditions.

I seek to show that there is a close interrelationship between apparently different clinical pictures.

The conception of migraine has been clouded by the dramatic features of its classic form of attack or by over-emphasis of one or other of its manifestations. In one person there is the characteristic hemicrania, with or without visual phenomena; in another the headache is bilateral and is associated with nausea and vomiting; in yet another there is no headache and the manifestations are abdominal. The form may vary in the lifetime of one individual and in members of the same family. The cyclical vomiting of childhood may give place in the twenties to the classic hemicrania with its aurae, and this in turn may give place in middle life to recurring general headache associated with gastro-intestinal disturbance.

The clinical pictures are equally variable and suggestive. There is the disciplined man with a high-strung nervous system who has had a heavy week's work and perhaps is congratulating himself how well he has stood it. He plays a game of golf on Sunday. He may then plume himself on the fact that he is as young as ever and play a second round. He then eats freely. Then comes the downfall—migraine. What happens? He is a man in whom the burden of fatigue falls on his plain muscular tissue. As the week advanced his stomach and intestine lost tone, and the functional capacity of digestion and metabolism deteriorated. The physical fatigue of the golf on the top of the week's duties lowered his blood pressure and put his digestion out of business. Here the sequence of events was: exhaustion—failure of digestion—toxaemia—headache. One round of golf followed by a light meal and recumbency would have done him good.

In very marked cases of gastro-intestinal responsiveness to fatigue, associated as they often are with low blood pressure, the only way is to let the man rest on the Saturday, take his exercise on the Sunday, and then he will be a king on Monday.

Let me give another example. A spare man of efficiency and conscience (this ilk so often suffers) works all day in the city, and in order to "keep fit" walks home, say, two or three miles at night. He complains of dyspepsia and frequent headaches of the migraine type. Why? The physical exercise following his mental labour was too much for him; the motility of his upper alimentary tract gave out, indigestion followed, and this provocation—perhaps a toxaemia—caused, in a man with an inherent tendency to headache, migraine attacks sometimes conforming to classical description and at other times atypical. Had he not possessed this innate liability to headache, he would have been a flatulent dyspeptic, and perhaps had his appendix or gall bladder out, or had colopexy performed. If he had not possessed a gastro-intestinal tract over-responsive to fatigue he would probably have had recurring attacks of hemicrania with visual phenomena. What cured him? Driving home instead of walking, resting for half an hour in the recumbent position, careful attention

* Delivered before the South Staffordshire Division of the British Medical Association.

to warmth of his extremities, and a dinner of light solid first-cooked food with a small amount of good wine. This patient took his exercise exclusively at the week-end and with benefit; he was one of those who could not stand physical and mental effort at the same time.

Such patients often do not tolerate cooked fats. This means that their hepatic capacity is naturally poor, or is rendered so for the nonce by fatigue. They can take uncooked butter and even cream, but not cooked fats, and the latter will sometimes produce acetonuria. This is one of the reasons why sodium bicarbonate in full doses is the best remedy for some cases of migraine. For cyclical vomiting alkali and glucose by the rectum are sometimes followed by striking success.

The order of the symptoms will vary. In some the gastro-intestinal upset precedes the headache and in others the reverse order prevails. A recent letter in the BRITISH MEDICAL JOURNAL, signed "Consulting Surgeon," describes the association of acetonuria with cyclical vomiting in one of his children and with migraine in himself. The former he cured by magnesium carbonate and glucose, and the latter he relieved by sodium bicarbonate.

I will pass to another clinical picture. Given a proclivity to headache, and a responsive abdomen, and let it happen that the feet and hands become cold and the abdomen uncomfortable—beware! Warmth must be restored and only the lightest of food eaten. If not, the next movement of the bowel will be ineffective and the motion broken up. The bowel, though it opens, does not empty; there is retention of contents, the defences of the colon seem to weaken, and migraine—of classical or irregular type—will follow. If such a patient be given an ordinary aperient pill, especially a strong one, there is a liability of making him worse, for thereby the bowel is irritated and the defences further weakened, and he feels a worm—a condition described by the victim as "poisoned."

What happens? Provoked by cold, fatigue, or worry (and the worry need not be real, for these patients are sometimes of the "worriting" sort), there is spasm of arteries and of colon. The function of the latter fails—emptying is incomplete, toxic products get through, then follows headache. If no such proclivity to headache existed the patient would get an attack of so-called "colitis."

Abdominal Migraine.

A patient, aged 30, had periodic attacks coming on suddenly, and often in the night, with upper abdominal pain and vomiting. They lasted two or three days. A thorough abdominal exploration showed stomach, duodenum, gall bladder, and appendix to be normal. The latter was removed. Both the father and mother of the patient had been victims of classical migraine. Many such cases have been reported, and in some of them a phase of typical migraine attacks has given place to that of abdominal attacks.

ETIOLOGY.

In the understanding of the headaches we are considering, a number of factors, variable as to their presence and influence, have to be considered. These factors vary in different individuals and even in the same individual at different periods of life.

1. A proclivity to headache. Thus migraine is hereditary in more than one-third of the cases, and can sometimes be traced in one form or another through several generations.

> Dr. Yeatman describes himself as "One of the fifth generation of sufferers, propagated through the female line, complicated by gout, and always precipitated by exposure to cold or irregularity of meals, preceded by a feeling of cerebral discomfort, closely followed by general headache, a boring throb at the back of one eye, subsequent sickness, and gradual recovery, accompanied by free secretion of watery urine."

2. Anxieties, fears, repressions, and other psychical conditions.
3. Fatigue and exhaustion.
4. Gastro-intestinal: proneness to fatigue, leading to failure of motility and perhaps secretion, as already set forth. The brain and solar plexus are in error, the proportion and order of their responsibility varying.
5. Hepatic insufficiency.

In some cases several of these factors may contribute, whereas in others one will dominate. Thus you may have the subject troubled neither by fatigue nor anxieties, but the liver can only deal with the lightest food and will not tolerate alcohol; such persons will have periodic attacks of migraine, have a tendency to high blood pressure, and in middle life substitute gout for their headaches, though in these days the acute gouty arthritis is less common. On the other hand, migraine may result from half an hour's acute anxiety without any apparent association with digestive or metabolic changes.

DIAGNOSIS.

When we get beyond the precise boundaries and coherency of organic disease into disorders of function the aim of diagnosis is not to seek a label but to search out the why and the wherefore in each patient. The illness will be the result of reaction between external conditions and that particular patient's physiological and psychological make-up. The physician needs first to investigate the present disorder of function by all the tests at his command; next he must know the patient's physiological and psychological habit and workings; and lastly the circumstances of his mode of life and career.

I have given examples of states of body, and will now pass to the brief consideration of states of mind.

The victims of these headaches are often well educated and capable people in whom achievement counts for much, with the pride and hidden vanity that accompany its pursuit. At the same time they are sensitive to the dictates of conscience and duty, which easily become exaggerated and exacting. They thus keep their minds under the lash, and if fatigue supervenes they do not rest but lash themselves more. They strive for superiority; they try to avoid inferiority, and, if they fail, seek to disguise the fact from themselves by psychological pretext. If one adds that they are people of self-control and sometimes of reserve, it is easy to see that repressions and conflicts sometimes hidden under a plausible explanation lead to various failures of adjustment to daily life. Such "conflicts" come out in the pursuit of career, in sex relationships, in social ambitions. Headache is often an expression of the conflicts—with or without concurrent abdominal disturbance.

What the doctor has to do is to read and unravel the lines of force within the patient's mind when the latter is up against a concrete difficulty or trial. The treatment should be *ad hoc*. The doctor can then help the patient to understand himself, and point the way to the truth rather than crudely disclose it. So does diagnosis become the best treatment.

TREATMENT.

Treatment is in large measure a study of causes which are variable for different people but fairly constant for one individual.

In those people in whom the headache stands alone, and is the result of responsibility and stress, the day of rest is needed, but still more the right way of using it. So often the day of rest sees the same strenuousness and feverish activity as the day of work. It is relaxation which is needed, and its art requires study. Exercise to be beneficial must bear relation to the frame, physiological habit, and the week's work. There are times when the subject prone to headache needs a day or half a day in bed with windows open, the lightest of diet, and a diverting book. It is to be remembered that some headache victims have no twilight, no forewarning of fatigue, and in extreme cases their lives alternate between orgies of activity and prostration.

The best treatment is to show them the nature of the problem. In some cases an unusual somnolence, with or without yawning, in others an exaltation of fitness, may be danger signals, but often there is no warning. Some people must have fresh air. In the war many migraine subjects during their time in the trenches were immune from attacks. Eye-strain is an accepted exciting cause which needs no comment. Tobacco may be a cause, also alcohol, and—which is interesting—some victims are vulnerable to certain kinds of alcohol and not to others.

As regards the alimentary tract, I have already mentioned the importance of first-cooked foods, the avoidance of cooked fats, and in some cases restriction of sugar. Investigation in each case is needed.

People in whom the gastro-intestinal tract manifests their

fatigue should be careful to be warm when eating and to partake of light food when tired. Many an attack could be avoided by such precautions.

A word on aperients. Patients who are strong, of the gouty type, and whose headaches are mainly due to hepatic insufficiency, are benefited by routine administration of calomel and saline every ten days, but for many, if not most, headache subjects strong aperients are harmful. The dose of salts which would cover a sixpenny piece or a shilling, in the early morning, is sound because it stimulates the ampulla of Vater, but no fuller dose. Castor oil in doses of 1 to 3 drachms once or even twice a week helps many, and others can take the lighter aperients like cascara or senna.

I will not stay to discuss palliative measures; each subject must find his own best—an important thing, because the rule for the headache subject is to "carry on" if possible. Any palliative must be taken at the onset. Salicylate and bromide and sal volatile suits many. Phenacetin is invaluable; pyramidon for the few; cachet Faivre has staunch supporters, but is too depressing for some.

For those prone to acidosis sodium bicarbonate is the indication. Luminal is in some cases helpful, but its effects need watchfulness, because there are some patients it does not suit; thus now and then a blueness of lips may be noted, or again, a dullness or slight perversion of mental outlook.

Skilled massage of the head and neck, and manipulation which includes gentle traction of the head from the trunk, bring great relief to some people. But enough. Headache illustrates a problem which will increasingly occupy the attention of the medical profession—namely, the keeping of man in the path of "physiological righteousness."

Note.—A list of references given by Lord Dawson will be found at the back of the JOURNAL (p. 652).

THE SURGICAL TREATMENT OF PARALYSIS OF THE VOCAL CORD AND OF PARALYSIS OF THE DIAPHRAGM.

BY

LIONEL COLLEDGE, M.B., B.CH., F.R.C.S.,
SURGEON, EAR AND THROAT DEPARTMENT, ST. GEORGE'S HOSPITAL;
AND
SIR CHARLES BALLANCE, K.C.M.G., M.S., F.R.C.S.,
CONSULTING SURGEON, ST. THOMAS'S HOSPITAL.

II.—ELECTRICAL STIMULATION OF THE RECURRENT LARYNGEAL NERVE.

WHEN the recurrent laryngeal nerve is divided previous to the anastomosis of its distal end to the phrenic or some other nerve it has been the rule to stimulate it while the vocal cords have been observed through the laryngoscope. Abduction and adduction of the vocal cord on the side on which the recurrent laryngeal nerve is being stimulated are plainly visible. If, however, the undivided recurrent laryngeal nerve is stimulated both vocal cords move equally. The movement of the opposite vocal cord is obviously induced by a sensory reflex reaching the respiratory centre from the site of stimulation. Possibly also both vocal cords are moving in obedience to the sensory reflex. The movements of the two cords appear to the eye to be synchronous, the vocal cord of the opposite side not moving later in time than the one on the same side as the stimulation. In another experiment, in which on the side opposite to the stimulation an end-to-side recurrent laryngeal-phrenic anastomosis had been done nine months previously and the vocal cord on the side of the recurrent laryngeal-phrenic anastomosis had been for three months moving rhythmically with the opposite or normal cord, the stimulation of the undivided recurrent laryngeal nerve was followed by movements of both vocal cords, but the movement of the opposite vocal cord was much more pronounced than the movement of the vocal cord on the site of stimulation.

This result brings this experiment into line with other experiments already described, and indicates that the nerve current passing through the phrenic nerve is stronger than that which passes along the recurrent laryngeal nerve in normal circumstances. Stimulation of the appropriate area of the cerebral cortex always induces a movement of both vocal cords and never of the opposite cord alone. The above experiment shows that the same obtains from stimulation of the undivided recurrent laryngeal nerve; the reflex causing movement of both vocal cords in this case probably comes from the medullary respiratory centre and not from the cerebral cortex.

There is, however, a possible source of error in interpreting all these results of stimulation of the recurrent laryngeal nerve. It is not possible for the arytenoideus muscle to contract without causing adduction of both cords, while contraction of the crico-arytenoideus lateralis muscle of one side will cause adduction of the corresponding cord. The general result of the stimulation of the recurrent laryngeal nerve is that when a very weak current is applied to the peripheral end of the divided recurrent laryngeal nerve adduction of the cord on that side only occurs, and it may be supposed that this movement is induced by contraction of the crico-arytenoideus lateralis, but if a little stronger current is used both cords adduct, so that the arytenoideus may be supposed to be contracting. These observations have been made on the monkey, the cat, and the dog. Sometimes the cord movements have been seen from above and sometimes from below.

Following the adduction of both cords abduction occurs, but why the cord on the opposite side should abduct it is difficult to understand, except that the cords in normal circumstances always move rhythmically together. No doubt the crico-arytenoideus posticus on the side of stimulation receives a stimulus to contract, but why is it that the corresponding muscle of the opposite side also contracts? The abduction excursions appear to be as active as the adduction movements.

The division of the superior laryngeal nerve does not make any difference, though it was thought before the experiment was done that the intimate anastomosis of the superior and recurrent laryngeal nerves in the larynx might enable a reflex stimulus via the superior laryngeal nerve to reach the respiratory centre. Stimulation by a weak current of the proximal end of the divided recurrent laryngeal nerve produced no movement of the vocal cords.

It is noteworthy that in a paper by H. K. Anderson[5] on "Paradoxical pupil dilatation" in lesions of the sympathetic on both sides of the neck, the conditions that evoke the paradoxical effect are stated to be excitement, dyspnoea, anaesthesia, and death. These conditions are also associated with paradoxical movements of the vocal cords.

III.—THE PARADOXICAL MOVEMENTS OF THE VOCAL CORDS.

Haldane writes:[6] "The respiratory centre is a small area situated in the medulla. When this area is destroyed all rhythmical respiratory movements cease. No definite anatomical group of nerve cells has been defined at the position occupied by the respiratory centre. It seems clear that it is at about the position which is sensitive to chemical respiratory stimuli. The central paths for the innervation of inspiratory and expiratory movements must be different, but in what sense the centre itself is double is still obscure."

Negus states[7] that he and McDowell have proved in cats that the contraction of the laryngeal and diaphragmatic muscles is not synchronous. The glottis opens before inspiratory movement of the diaphragm commences and closes before expiration begins. It is clear that at the end of expiration a stimulus causes inspiration to begin, while at the end of inspiration a signal causes expiration to begin. The contraction of the diaphragmatic, intercostal, and abdominal muscles in expiration is associated with the closure of the laryngeal channel, while the relaxation of the above muscles and the contraction of other inspiratory muscles in inspiration are associated with the opening of the glottis. Evidently these events are very closely and intimately connected. They are, as John Hunter said of the lungs and heart in life, in sympathetic connexion; and any alteration in rhythm or timing must interfere with the perfection of these organic life movements. Negus adds: "The obstruction offered by the glottis to passage of air causes prolongation of the time

taken to fill or empty the lung and thereby causes suitable delay in the timing of the signals for emptying or filling of the lungs—namely, the Hering-Breuer reflex." However this may be, and it appears to be true—and we are not now discussing the CO_2 content of the air in the lungs or blood or other chemical problems—either the diaphragm or the muscles of the vocal cords must be the factor in maintaining the respiratory rhythm. We are inclined to think that the diaphragm, the principal muscle of inspiration, must be the factor. We do not forget that the first respiratory act after birth is inspiration. The metronome in music sets the time: the question is, does the movement of the diaphragm or that of the vocal cords act as the metronome of the respiratory movements?

In our experiments the diaphragmatic contractions, as observed by Professor Elliot Smith, some months after certain anastomoses had been performed were quite normal; but in some instances, in which a double anastomosis had been carried out months previously on both sides of the neck, the vocal cords exhibited a paradoxical movement—with inspiration adduction and with expiration abduction. Before the second anastomoses were done on the left side of the neck the vocal cord on the right side of the neck was moving well with the opposite cord, but when the vocal cord on the left side began to recover from the paralysis it not only started to work in wrong time with the diaphragmatic contractions, but it prevailed on the vocal cord on the right side, which had for months been moving in a normal manner, to join it in a paradoxical movement.

Again, in another experiment (monkey) an end-to-side recurrent laryngeal-phrenic anastomosis was done on the right side and an end-to-end recurrent laryngeal-phrenic anastomosis on the left side. Six months after the first operation the right half of the diaphragm was contracting normally, and so was the vocal cord. On the left side the distal end of the divided phrenic nerve was not anastomosed to any other nerve, and the left half of the diaphragm remained completely paralysed. Six months after the recurrent laryngeal had been anastomosed end-to-end to the phrenic nerve the left vocal cord was moving in a normal way with the other cord. Why in this monkey is there no paradoxical movement of the vocal cords? Indeed, in this monkey there never has been any trace of stridor or difficulty of breathing. The answer seems to be that though the left half of the diaphragm is completely paralysed, the right half is working naturally through nerve influences passing down the phrenic nerve, and the suggestion is made that this half of the diaphragm is acting as a metronome of the respiratory signals.

When both halves of the diaphragm are contracting in consequence of stimuli passing through the descendens noni-phrenic anastomoses and both vocal cords are moving in obedience to signals traversing the recurrent laryngeal-phrenic anastomoses, some factor, it appears, may arise—for example, deep anaesthesia—which disturbs the normal timing of the contractions of the laryngeal and diaphragmatic muscles. No one of these groups of muscular fibres is working under normal conditions, though under such conditions their life and movement are in intimate and sympathetic connexion. There may be delay in the receipt of one or more of the appropriate signals; the longer distance which the nerve current has to traverse and the possible obstructions *en route* may have some adverse influence; or it may be, and it is probably true, that the laryngeal and diaphragmatic muscles get out of step because no one of these four groups of muscles is able, in the new and strange circumstances of their active life, to act as the metronome of the complicated respiratory movements.

IV.—THE DIAPHRAGM.

When the experiment was performed of dividing the phrenic nerve and uniting the end of the proximal segment to the divided end of the distal segment of the recurrent laryngeal nerve, the question arose how best to anastomose the distal end of the phrenic nerve to some other nerve, so as, if possible, to provide for the recovery from paralysis of the corresponding half of the diaphragm. The problem was solved by dividing the descendens noni and uniting the proximal end to the distal end of the phrenic nerve.

In the monkey experiments, when the main trunk of the phrenic nerve is mentioned, the main trunk formed by the union of the roots coming from the third and fourth cervical nerves is meant, as the root derived from the fifth cervical nerve has never been demonstrated during an experiment. In the dog, when the main trunk of the phrenic nerve is referred to, the main trunk formed by the union of the roots coming from the fifth and sixth cervical nerves is meant; the root, a considerable one, which arises from the seventh cervical nerve or brachial plexus, is placed at the upper opening of the thorax, and has never been seen during an experiment.

In the monkey, presumably as in man, the root of the phrenic from the fifth cervical nerve is variable, and when present small. In the dog, however, the root of the phrenic from the seventh cervical nerve is of fair size, and can easily be demonstrated by dissection. It is of much interest to note that in the monkey division of the phrenic trunk formed by union of the roots derived from the third and fourth cervical nerves, and in the dog division of the trunk of the phrenic nerve formed by union of the roots derived from the fifth and sixth cervical nerves, is followed in each instance by complete paralysis of the corresponding half of the diaphragm. The root of the phrenic from the fifth cervical nerve in the monkey when present probably innervates a special area of the diaphragmatic muscle. The same is probably true in the dog concerning the root of the phrenic nerve from the seventh cervical nerve. If this is correct then these special areas of the diaphragm ought to be the first to recover function—that is, if they ever really lost their power to function.

It may be suggested that if one cervical root of the phrenic nerve is divided the recovery of the contractile function of the whole of the corresponding half of the diaphragm is due to the spread of the healthy terminal filaments of the phrenic nerve to the paralysed area of the muscle. This is contrary to what is known of the recovery or continued palsy of muscular tissue in all other parts of the body. As in end-to-end anastomosis of the phrenic nerve to the recurrent laryngeal nerve there follows after a time a recovery of function of the vocal cord muscles, so in descendens noni-phrenic anastomosis it is reasonable to believe that the recovery of the diaphragmatic muscle is a direct consequence of the anastomosis. Besides, by experiment we know that in a monkey fifteen months after the division of the trunk of the phrenic nerve formed by the union of the roots from the third and fourth cervical nerves the corresponding half of the diaphragm remains completely paralysed. Further, the microscope demonstrates that the phrenic nerve distal to its anastomosis with the descendens noni nerve recovers its normal anatomical structure, just as the recurrent laryngeal nerve distal to its anastomosis with the phrenic nerve resumes its normal microscopical appearance. Electrical stimulation also of these anastomoses gives rise to the normal corresponding muscular contractions.

Keith[8] describes the origin and development of the diaphragm.

"The branchial muscles which formerly forced water through the gill slits are now transmuted into pharyngeal muscles and help to pump air into the lungs, thus acting as muscles of inspiration. The muscles of the body wall are modified to form muscles of expiration. It is worthy of notice that each half of the mammalian diaphragm is developed from two embryonic muscular sources:

"(*a*) *A sterno-costal portion* derived from the ventral longitudinal musculature of the embryonic neck. These muscular sheets give rise also to the rectus abdominis and the depressor muscles of the hyoid bone and larynx.

"(*b*) *A special or vertebral portion* arising from the bodies of the vertebrae and arcuate ligaments, and derived from the cervical part of the transversalis.

"The nerve supply of the diaphragm also points to the fact that there are two distinct muscular elements in the diaphragm. The phrenic nerve when it reaches its corresponding half of the diaphragm divides into two branches—a vertical to the right and left ventro-lateral parts (from the third and fourth cervical nerves) and a dorsal branch (from the fourth and fifth cervical nerves) to the right and left dorsal parts."

Notwithstanding the complicated story of the evolutionary history of the muscle of the diaphragm there is no evidence that any portion of the muscle has a double nerve

supply. It is of interest to note that the depressor muscles of the hyoid bone and larynx and the rectus abdominis are so closely associated in development with the sterno-costal portion of the diaphragm, all these muscles being associated with the respiratory movements.

As in the monkey the roots of the phrenic arise from the third, fourth, and fifth cervical nerves, and in the dog from the fifth, sixth, and seventh cervical nerves, the site of section of the descendens noni nerve for the purpose of doing a descendens noni-phrenic anastomosis may be different. In the monkey the descendens noni nerve is divided above the origins of the branches to the depressor muscles of the hyoid bone and larynx, and the proximal end is united to the distal cut end of the phrenic nerve. It is then desirable to do another anastomosis —namely, to unite the distal cut end of the descendens noni nerve to the lower border of the hypoglossal nerve (end-to-side anastomosis) — so as to obviate permanent paralysis of the omo-hyoid, sterno-hyoid, and sterno-thyroid muscles. (Fig. 22.) This anastomosis has been performed in man, and in animals many times, and always with success. The distal cut end of the descendens noni nerve has in some instances been united, not to the hypoglossal nerve, but to the phrenic nerve, end-to-side, above the recurrent laryngeal-phrenic end-to-end anastomosis. In the dog the descendens noni nerve can be divided below the origins of the nerves to the omo-hyoid, sterno-hyoid, and sterno-thyroid muscles; the proximal cut end can then be united, end-to-end, to the distal cut end of the phrenic nerve. In these circumstances it does not appear necessary to provide for the anastomosis of the distal end of the descendens noni nerve with any other nerve. Whether it would be best in all circumstances to sever the descendens noni above the origins of the nerves to the depressor muscles of the larynx and hyoid bone, when the object in view is the recovery of diaphragmatic paralysis, is not clear.

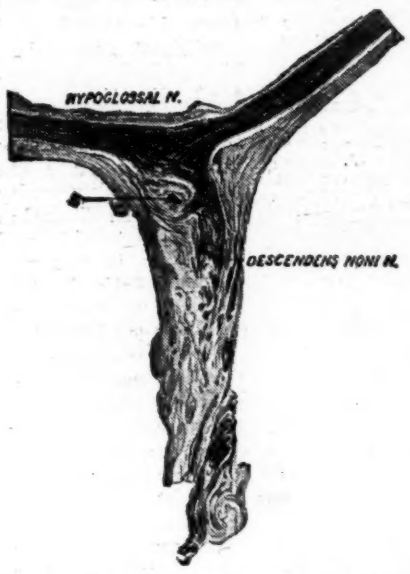


FIG. 22.—Baboon. Descendens noni-hypoglossal anastomosis, end-to-side. Specimen obtained fourteen months after the operation. Stroebe stain; *s*, remains of suture. Complete recovery of function of sterno-hyoid, sterno-thyroid, and omo-hyoid muscles.

In the dog recovery of the functions of the diaphragm is obtained by dividing the descendens noni nerve below its branches. The descendens noni nerve must certainly have many more nerve fibres, and nerve fibres too definitely associated with muscular action, above the origins of the nerves to the depressor muscles than below them. In the monkey the nerve below these branches is very small, but in the dog it is of fair size, and continues its course through the upper opening of the thorax. In man if it was necessary to divide the phrenic nerve there can be little doubt that it would be the right practice to divide the descendens noni nerve proximal to the place where its first branch is given off.

The descendens noni nerve, like the facial artery, has a tortuous course, as it lies among structures which are always in movement and constantly altering their length and position; hence when the nerve is dissected out it is of sufficient length so that it can be made to extend to any desired place.

In some instances one of the roots of the phrenic nerve was divided (instead of dividing the main trunk of the phrenic nerve), the proximal cut end of the root being united end-to-end with the distal cut end of the recurrent laryngeal nerve, while the distal cut end of the root of the phrenic nerve was anastomosed end-to-end with the proximal cut end of the descendens noni nerve. If the descendens noni nerve had been divided above the origins of the nerves to the depressor muscles then, as described above, a further anastomosis of the distal end of the descendens noni would be carried out.

In one instance an end-to-side anastomosis was performed, the end of the recurrent laryngeal nerve being united to a root of the phrenic nerve; the result being a partial paralysis for some months of that portion of the diaphragm supplied by the nerve fibres of the injured root.

It does not appear that there is any advantage in choosing a root, instead of the main trunk, of the phrenic for anastomosis with the recurrent laryngeal nerve; indeed, in one experiment the final recovery of the function of the diaphragm appeared to be delayed by the employment of this plan of anastomosis.

EXPERIMENT XII.—*Baboon.*

In this instance when the main trunk of the phrenic nerve on the *left* side had been divided and its proximal end sutured, end-to-end, to the divided recurrent laryngeal nerve, it was noticed that a large nerve was arising from the fourth cervical nerve close to the origin of the root of the phrenic nerve from the fourth cervical nerve. This large nerve received also a smaller root of origin from the third cervical nerve and passed down the neck for some distance near the phrenic nerve. It was the descending superficial cervical nerve which afterwards divided into suprasternal, supraclavicular, and supra-acromial branches. The trunk of this nerve was divided and its proximal end was sutured end-to-end to the distal cut end of the phrenic. (Fig. 23.) This union of the phrenic nerve with a sensory nerve seemed to be justified by the surprising results obtained by union of the lingual, glosso-pharyngeal, and cervical sympathetic nerves with the facial nerve. It would seem that the actual pathway of a nervous impulse is not of such moment as has been hitherto generally believed, as long as the nerve cells from whence issue the nerve impulses (in this case the nerve cells of the respiratory centre) and the nerve fibre endings (in this case in the muscle elements of the diaphragm) are intact. Sir David Ferrier was present at this operation.

A week after the operation some anaesthesia in the region of the distribution of suprasternal, supraclavicular, and supra-acromial nerve branches was demonstrated. *Five months* after the operation no anaesthesia of the skin in the region of distribution of these nerves could be made out, but the monkey was difficult to examine and the examination was not very satisfactory. *Eight months* after the operation the left vocal cord was moving in tranquil respiration rhythmically with the vocal cord of the opposite side and to an equal extent.

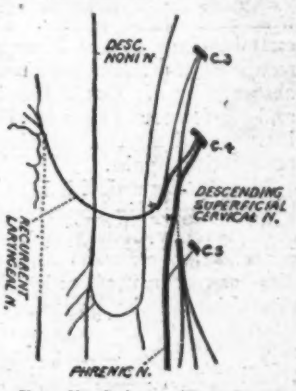


FIG. 23.—Baboon (Experiment XII). Recurrent laryngeal-phrenic end-to-end anastomosis. Descending superficial cervical-phrenic end-to-end anastomosis.

The Diaphragm.—Dr. Eidinow, with his radiographic screen at the Hampstead Research Institute, reported that the left half of the diaphragm was contracting well; in fact, there was no difference in the contraction movements of the two sides of the diaphragm.

This experiment remains a single one and therefore must not be too much relied upon. Unfortunately a week after Dr. Eidinow's examination the baboon became ill and had to be destroyed.

In other instances the cut end of the recurrent laryngeal nerve was united, end-to-side, to the main trunk of the

phrenic nerve, either to a small lateral incision made in the side of the phrenic nerve, or to a small median incision made in the middle of the phrenic nerve. In these cases no further anastomosis was necessary. An immediate partial paralysis of the corresponding half of the diaphragm results, and in all probability after a few days the cellular invasion at the site of anastomosis causes an anatomical division of the trunk of the phrenic nerve, so that complete paralysis of the corresponding half of the diaphragm ensues. But this paralysis is evanescent and passes off in three or four months.

This method of anastomosis — recurrent laryngeal-phrenic anastomosis, end-to-side— appears to be the method of choice for operations on man, as has been said in the previous remarks on the vocal cords. It simplifies the operation; it avoids the making of more than one anastomosis; it is satisfactory in that it promises recovery of the movement of the vocal cord, and in that it promotes recovery of the function of the diaphragm by regeneration of the phrenic nerve itself.

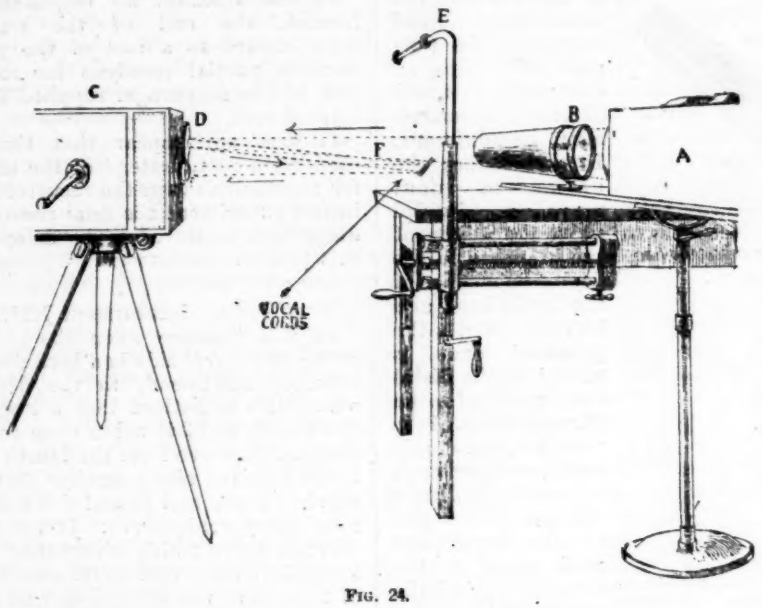


FIG. 24.

On one occasion, when the descendens noni and hypoglossal nerves were exposed, the hypoglossal nerve was stimulated. The thyro-hyoid muscle contracted and the depressor muscles relaxed; thus a typical Sherringtonian phenomenon was observed of contraction and relaxation of opposing muscles. The reverse experiment, of stimulation of the descendens noni nerve, which caused contraction of the omo-hyoid, sterno-thyroid, and sterno-hyoid muscles, should have been associated with relaxation of the thyro-hyoid muscle, but this could not be determined with certainty because of the overlying structures.

It is not possible to determine with accuracy whether half the diaphragm is in part or completely paralysed by observing or palpating the movements of the abdominal wall and costal arches. Dr. Eidinow kindly made some examinations at the Hampstead Institute for Research by means of the radiographic screen, and the results were also observed by Sir David Ferrier, the late Sir Frederick Mott, and Professor Leonard Hill. It was believed in each instance that the previously paralysed diaphragm was contracting again.

It was then decided to take some of the animals to the radiographic department of the Anatomical Institute of University College, Professor Elliot Smith having kindly promised to examine and report on the condition of the diaphragms in these animals. Dr. Beattie and Mr. Melville also observed the contractions of the diaphragmatic muscle through the radiographic screen. It will be seen from the reports of experiments that recovery of the muscular contraction of the diaphragm had taken place in each case.

V.—THE METHOD EMPLOYED FOR FILMING THE CORDS. (See Figs. 24 and 25.)

We are much indebted to the British Instruetional Film Company for the painstaking effort which they made to film the vocal cords. The following are the chief points of the method employed:

1. A special high and solid table was made so that when the animal was anaesthetized and placed on it the eye of the observer, when standing, was on a level with the vocal cords.

2. A powerful beam of light from an arc lamp, A, was directed on and reflected from a small mirror through a special laryngoscopic tube, X. In length this tube was 5 inches along the upper border and 4 inches along the lower. The beam of light, before it reached the mirror, was caused to pass through a film of water, B. In this way the heat rays were cut off.

3. The inner extremity of the laryngoscope was a little larger than would ordinarily be employed for examination considering the size of the animal. It measured three-quarters of an inch from side to side and a millimetre more than half an inch in the vertical direction. The whole tube was oval in shape, and gradually increased in size till at the outer extremity it measured 2 inches from side to side and 1⅜ inches in the vertical direction. The oval shape facilitated the passage of the beam of light, F, down the tube to the region of the vocal cords. The tube itself was blackened inside so as to prevent any reflection of light except from the vocal cords. A black oval screen, Z, was fitted around the outer extremity of the laryngoscope. It projected 1½ inches on either side of the outer extremity of the laryngoscope, and in the vertical direction the screen extended 1⅛ inches above the opening of the tube and three-eighths of an inch below.

4. The laryngoscope was fixed to the ordinary suspension apparatus of Killian, E, by a metal rod. Thus unnecessary movement was avoided. In this rod was a hinge, Y, which could be fixed. The hinge allowed of the inner extremity of the laryngoscope being tilted a little upwards and downwards so as to facilitate the best exposure of the vocal cords.

5. The reflector, D, was attached close to the lens of the cinematograph camera, so that the light was reflected down the laryngoscope as nearly parallel as possible to the optical axis of the camera, C.

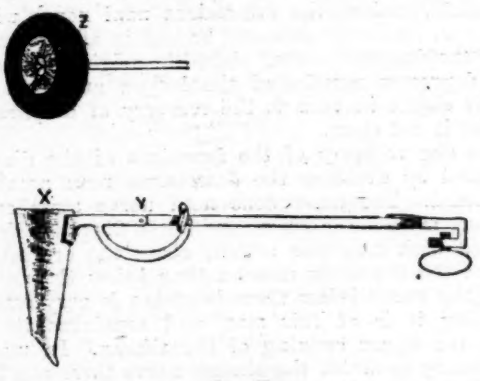


FIG. 25.

6. The anaesthetized animal was fixed approximately in position with a number of small sandbags. Then fine adjustments were made by means of the vertical and horizontal movements of the suspension apparatus and the hinge already referred to situated close to the laryngoscope.

7. One of us (L. C.) found it easy to manipulate the apparatus.

REFERENCES.

[5] *Journ. of Physiol.*, XXX, 1904. [6] *Respiration.* [7] *Lancet*, September 19th, 1925. [8] *Human Embryology and Morphology*, and *Journ. Anat. and Physiol.*, vol. 9.

CHOLECYSTOGRAPHY.

BY

D. P. D. WILKIE, M.Ch., F.R.C.S.,
PROFESSOR OF SURGERY, UNIVERSITY OF EDINBURGH;

AND

C. F. W. ILLINGWORTH, M.B., F.R.C.S.E.,
CLINICAL TUTOR AND SENIOR CLINICAL ASSISTANT, ROYAL INFIRMARY, EDINBURGH.

IN the two years which have elapsed since Graham introduced the method of cholecystography a very large amount of evidence has accumulated as to its value and the discomfort or dangers which may attend its use as a routine method of clinical diagnosis. When any new method is on trial, particularly when it is one requiring the intravenous administration of a new chemical compound the manufacture of which is not fully standardized, there are apt to be a few instances of alarming disturbances which further experience proves to be readily avoidable.

In our earlier cases we used a dose which was larger than that recommended by Dr. Graham, but which in our hands gave rise to no alarming symptoms. The record of a fatal case, where this larger dose was used, has led to a certain apprehensiveness in regard to the use of the method which we greatly regret, and it is due to Dr. Graham to say that no case of serious complication has followed an injection of the drug as practised and recommended by him. Our own experience has been that the larger dose (5.5 grams) which we used in our first 50 cases, having based our practice on that of the Parisian hospital where we first saw the method employed, is unnecessary, and that sufficiently good shadows can be obtained with a smaller dose (3 to 4 grams). It cannot be too strongly emphasized that the solution (40 c.cm.) must be freshly prepared, and must be injected slowly and with care. In our last 60 cases there have been no severe reactions, and in the vast majority no noteworthy disturbance of any kind. Whilst in some clinics the oral method is that in general use and gives satisfaction, we have seen no reason to abandon the intravenous use of the drug, and believe it to be the more certain and accurate method.

As to the value of the test as an aid to diagnosis there can no longer be any doubt. The total absence of a shadow, in a case with the clinical symptoms of gall stones, is reassuring and convincing evidence of the necessity for operation. The presence of a perfectly normal gall-bladder shadow, in a doubtful case of dyspepsia, is strong, if by no means absolute, evidence that the gall bladder is not at fault. Perhaps the most beautiful piece of evidence is where, in the doubtful case, the gall bladder is outlined and in it is visible a negative shadow where a cholesterin stone has displaced the dye. The faint and poor shadow indicating defective concentration is almost pathognomonic of a cholecystitis with or without stones. Hardly less useful in diagnosis is the displaced or deformed gall-bladder shadow, in the case of a swelling in the right hypochondrium, indicating a growth or other swelling in an adjoining viscus. With increasing experience we find ever more numerous the helpful points of evidence furnished by this radiographic test.

Before analysing the clinical material at our disposal we give an exact description of the method now employed by us. In the evening, twenty-four hours before the injection is given, the patient takes a dose of liquorice powder. The following day a skiagram of the upper abdomen is taken. At 9 p.m. 3.5 grams of tetra-iodo-phenol-phthalein (British Drug Houses), freshly dissolved in 40 c.cm. of distilled water, is given slowly into the median basilic vein, great care being exercised that not a drop escapes into the subcutaneous tissues. At 9 o'clock the following morning a skiagram is taken. A small barium meal is then given, and as the barium is escaping into the duodenum another skiagram is taken to demonstrate the relation of the shadows of gall bladder and duodenum. At 1 p.m. a meal rich in fat is given, and at 3 p.m. a final radiogram is taken to show the emptying power of the gall bladder.

We have now examined 158 cases, and in 132 of these the data obtained have been controlled by subsequent operation.

Normal Gall-bladder Shadow.—In 58 cases the gall bladder presented what was judged to be a normal shadow. In 50 of these a normal gall bladder was disclosed at operations carried out for a variety of upper abdominal lesions. In one case several very minute calculi were present in a gall bladder of normal colour and texture. In one case a single cholesterin stone, the size of a pea, was removed from what appeared to be a healthy gall bladder. In 3 cases there was definite evidence of a mild chronic cholecystitis, confirmed by microscopic examination, and in one of these, where the gall bladder was removed, a small lipoid papilloma was present. In the remaining 3 cases there was a mild but undoubted catarrhal cholecystitis, and streptococci were grown on cultures made from a portion of the wall. It is thus seen that an apparently normal cholecystogram is not quite conclusive evidence that the early stages of disease in the gall bladder are not present.

Absent Gall-bladder Shadow.—In 50 cases no shadow could be detected in the radiogram. In 44 of these the gall bladder was grossly diseased. In many the cystic duct or neck was occluded by a calculus, in others the viscus was completely filled with stones, in yet others it was shrivelled and functionless. In 13 of these 44 cases there was obstruction of the common duct and the patient was jaundiced. In 6, although no dye entered the gall bladder, calculi were clearly visible in the film. In 6 cases, in spite of the absent shadow, a normal gall bladder was disclosed at operation. These cases were very difficult to explain, as in all the ordinary technique had been followed. Possibly a temporary kinking of the cystic duct was responsible for the failure of the dye to enter the bladder. Certainly in two of them normal cholecystograms were obtained some weeks later. Most of them occurred in our earlier cases, and we are inclined to attribute the fault more to some mismanagement than to any inherent weakness in the test.

Faint Gall-bladder Shadow.—In 10 cases the gall bladder was faintly visible, but there was obviously defective concentration of the dye. In 3 of these there were negative areas due to stones. In all of them a very definite chronic cholecystitis was found at operation and the gall bladder was removed. It is obvious that only after considerable experience with a particular technique and with a well established standard for comparison can conclusions be drawn from mere variations in the density of such shadows.

Shadow of Gall Bladder and Calculi.—In this group are included 11 cases; in 5 the gall bladder was clearly outlined and in addition there were positive shadows of calculi. In 6 cases negative areas in the shadow of the dye indicated the presence of cholesterin stones. Operation was carried out in all these cases, and the *x*-ray evidence was correct in each instance.

Displaced or Distorted Gall-bladder Shadow.—In this group there were 5 cases. In all the presence of a swelling below the right costal margin made the diagnosis of a distended gall bladder a possibility. In two cases the shadow of the gall bladder was visible below the swelling, which in one instance was a sarcoma, and in the other a hydatid of the liver. In two cases the gall-bladder shadow was present as a concave shadow lying over and above the swelling. In both instances this proved to be a growth of the hepatic flexure of the colon. In the fifth case the shadow lay in front of the swelling, which was later shown by pyelography to be a hydronephrosis.

Toxic Symptoms following Injection.

It may be stated at once that in no instance in our series of 158 cases have toxic symptoms, giving cause for alarm, been noted. In one case symptoms of collapse supervened during the injection, which was stopped before quite one-half of the usual dose had been given. The patient rapidly recovered with no untoward after-effects.

In 93 cases there were no toxic symptoms.
In 27 cases there was some nausea.
In 33 cases there were nausea and vomiting.
In 2 cases the patient complained of tingling in the limbs.
In 1 case a rigor followed the injection.
In 1 case nausea with headache was complained of.

There can be no doubt that with the reduction of the dose which we have made in our last 60 cases the toxic

symptoms have been markedly reduced and the radiographic results no less valuable, if not quite so striking. An injection of 4 grams for a stout subject and 3 grams for one of slender build, in each case dissolved in 40 to 60 c.cm. of distilled water, may be reckoned a perfectly safe dose. We have been unable to recognize any particular benefit from special preparation, or from the regular dosage with alkalis, which was followed scrupulously in our earlier cases. We have as yet had no opportunity to test the newer drug, phenol-tetra-iodo-phthalein, which, in Graham's clinic, is found to be less toxic than the tetra-iodo-phenol-phthalein.

Conclusions.

Cholecystography is a method of real clinical value in the diagnosis of diseases of the gall bladder. Not only does it show whether the gall bladder is functioning, but also how well or how ill it is functioning. It will frequently disclose the presence of gall stones which do not show in the ordinary radiogram. It may, by showing the relation of the gall bladder to an abdominal tumour, give strong presumptive evidence as to the site of the growth and the possibilities of surgical treatment.

Using pure sodium tetra-iodo-phenol-phthalein in a dose not exceeding 4 grams, freshly dissolved, and injected intravenously very slowly, no disturbing toxic symptoms need be feared. *X*-ray films made twelve hours after injection and six hours later, after a meal containing fat, should give reliable evidence as to the functional capacity of the gall bladder.

The method has its limitations, and an apparently normal cholecystogram does not exclude the possible presence of a small cholesterin stone or mild degrees of infective cholecystitis.

CHOLECYSTOGRAPHY.

THE RESULTS OF 125 CONSECUTIVE CASES EXAMINED BY THE ORAL ADMINISTRATION OF THE SALT.

BY

J. H. MATHER, B.Sc., M.B., CH.B., D.M.R.E. LIVERPOOL,
ASSISTANT LECTURER IN RADIOLOGY, UNIVERSITY OF LIVERPOOL; HONORARY RADIOLOGIST, ROYAL SOUTHERN HOSPITAL, LIVERPOOL;

AND

W. ROBERT WILLIAMS, M.D., CH.B. LIVERPOOL, F.R.C.S.ENG. AND ED.,
SENIOR ASSISTANT SURGEON, ROYAL SOUTHERN HOSPITAL, LIVERPOOL.

THE existence of such divergent views as to the relative values of the intravenous and oral methods of cholecystography has led us to believe that our results will be of interest.

The difficulty of oral administration appears to be due to the fact that the compound is decomposed by the hydrochloric acid of the stomach, converting the soluble salt into the insoluble free acid, which acts as an irritant and may be vomited. Endeavours were made, therefore, to provide for its passage through the stomach and liberation in the small intestine, where it would be absorbed and carried by the portal system directly to the liver. Stewart[1] of New York reported recently that he had obtained successful cholecystograms by enclosing the dye in keratin-coated gelatin capsules and using *x* rays twelve hours later. Other observers, however, do not seem to have met with the same success, and presumably their difficulties have been due to the unreliability of the preparation used, and also to the unsuitable nature of the capsule and its coating. In many cases the drug appears to have been liberated in the stomach, and vomiting has ensued, or the coating has been so resistant to the digestive juices that the capsules have been passed on into the colon intact.

In our early cases the results were similar. A British preparation of sodium tetraiodo-phenolphthalein, made into capsules by the manufacturers, was used. The capsules were not dissolved, as many as eight and even fourteen being seen in the large bowel next morning. We next obtained capsules of the iodine salt prepared in the United States. The results obtained were good but the cost excessive. Finally, an American preparation of sodium tetraiodo-phenolphthalein made up into capsules by the dispenser of the hospital seemed to be the most suitable. Different coatings were tried, but the best results were obtained by the following method.

Preparation of the Capsules.

The drug used is the sodium tetraiodo-phenolphthalein obtained from Messrs. Kodak, Ltd.; 0.3 gram of the salt is placed in a gelatin capsule, which is then given three coats of a keratin solution, made (using Merck's keratin) according to the *British Pharmaceutical Codex* formula. The capsules are allowed to dry in the air after each coat without heating. They are now prepared by a Liverpool firm of wholesale druggists from the salt supplied by Messrs. Kodak.

It is important (1) that the salt be obtained as fresh as possible and carefully stored, and (2) that the capsules be made up freshly. If capsules are kept for more than seven days the coating is not dissolved readily in the small bowel.

Technique Employed.

Twenty-four hours before administering the drug the patient is given an aperient, preferably one ounce of castor oil. On the day preceding the examination the patient takes an ordinary diet containing fats. No food is allowed after 6 p.m. and no further aperient is given. Between 9 and 9.30 p.m. the capsules are swallowed whole with sips of water. (For an average patient fifteen capsules are taken—that is, 4.5 grams of the salt.)

At 9.30 the following morning the first radiogram is taken, using the Potter-Bucky diaphragm, the patient being in the prone position. The patient returns at 12.30 p.m., and the second radiogram is taken. If the gall bladder appears normal at both these examinations the patient is told to take a meal containing fat and to return between 3 and 4 p.m. for a third radiogram. Should the gall bladder be empty or nearly so the examination is concluded. If it has not emptied, the patient is asked to return the following day. But in those cases where there is no suggestion of a gall-bladder shadow on both the 9.30 a.m. and 12.30 p.m. radiograms the examination is carried no further and a "pathological gall bladder" is reported.

If the gall bladder is normal a definite shadow is visible on the radiogram taken twelve hours after administering the dye. At the end of fifteen hours the shadow is denser and usually smaller. The radiogram taken two or three hours after the meal containing fat shows either no gall-bladder shadow or one very much reduced in size. If the gall bladder is not markedly smaller the patient is examined the following day.

Using the method outlined above cholecystography is as satisfactory as with the intravenous method, and it has the advantage that the preliminaries are very much simpler. Though the shadow with the oral method appears a little later, it is equally dense and yields equally satisfactory evidence of the form and function of the gall bladder.

It is important to realize the theoretical considerations involved in the use of this test. It demands a liver capable of secreting the dye into the bile capillaries, a patent cystic duct to allow of its passage into the gall bladder, and, finally, a mucous membrane sufficiently healthy to concentrate it by the reabsorption of water. It follows, therefore, that the normal gall bladder yields the densest shadow. At the same time it is obvious that a variety of conditions—adhesions and tumours pressing on the cystic duct or gall bladder, infections of the mucous membrane interfering with its power of concentration, thick tenacious debris in its interior—in addition to stones either in the cystic duct or gall bladder itself, can cause all degrees of variation from the normal density to complete absence of shadow. In actual practice, however, as seen from Table I, a definite and unequivocal complete absence of shadow occurs in 77 per cent. of the cases reported as pathological. Probably the only contraindications to cholecystography by this method are (1) advanced disease of the liver—for example, cirrhosis, secondary carcinoma—and (2) pyloric stenosis. Both these conditions, however, should be discovered by other methods, and there is little likelihood of their being present to confuse the issue in the type of case in which this investigation is being carried out.

Toxic Effects.

In our own series of cases we have seen no severe reactions. In two instances there was a slight rise of temperature, but in neither did it reach 100° F. Eight patients complained of nausea lasting a few hours, but only one of them actually vomited. This patient stated that she had vomited "purple material," but subsequent radiograms demonstrated a normal gall bladder which was unusually well defined on the *x*-ray film. Two somewhat

nervous patients vomited almost immediately after taking the capsules, which were returned whole, but this can hardly be attributed to any toxic effect of the drug. In one other case there was slight diarrhoea, the bowels acting three times during the night. All the other patients were apparently quite unaffected by the drug, and in no single instance did a patieht fail to appear at the appointed time for the first *x*-ray examination.

TABLE I.

Group 1.	Normal gall bladder outlined		56
Group 2.	No shadow	53	
Group 3.	Irregularity or deformity	3	
Group 4.	Non-opaque stones	8	
Group 5.	Delay in emptying...	5	
	Number of cases reported abnormal		69
	Total number of cases examined by the oral method		125

TABLE II.—*Operative Findings.*

Group 1:			
	Confirmed as being normal	3	
	Contained stones	1	
			— 4
Group 2:			
	Contained stones	19	
	Cholecystitis without stones	2	
	Adhesions around gall bladder	2	
	Tumour involving gall bladder and ducts	1	
	Gall bladder found normal	1	
			— 25
Group 3:			
	Inflammatory mass at the pylorus		1
Group 4:			
	Contained stones		4
Group 5:			
	Dense mass of adhesions at neck of gall bladder...		1
	Total cases operated on		35
	Total cases where *x*-ray diagnosis was confirmed ...		33
	Total cases where *x*-ray diagnosis was not confirmed		2
	Percentage of cases where *x*-ray findings were correct		94.3

Comments on the X-Ray and Surgical Findings.

The cases here reported were consecutive, arising in private and hospital practice, and have not been selected in any way. It will be observed that in a large number a normal gall bladder was outlined on the *x*-ray films. An interesting example in this group was seen in the case of a patient in whom a normal gall bladder containing three opaque stones was visualized; concentration occurred in the usual way and it also emptied after the fatty meal had been taken. From this it would appear possible for the gall bladder to function in a perfectly normal way despite the presence of stones. The patient's only symptom was occasional nagging pain under the right costal margin. The instance in this group where the *x*-ray diagnosis was not confirmed at operation was one of our earliest cases. Only a faint shadow was shown, but owing to our inexperience of the oral method it was interpreted as being normal. A similar finding now would undoubtedly be reported as pathological.

Of the cases falling into Group 2—that is, those where no shadow is seen—the *x*-ray and surgical findings point definitely to a non-functioning gall bladder. Although the *x*-ray finding is a negative one it is most valuable, and, if the preliminaries have been carefully carried out, can be definitely relied upon. Where the clinical signs have not been very suggestive of cholecystitis, it has been our practice to repeat the examination in those cases where no shadow was seen at the first examination. In two such instances a normal gall bladder was outlined at the second *x*-ray examination, the explanation in one case being that the patient had taken a breakfast of bread-and-milk before the 9.30 a.m. film was taken—the radiologist was not informed of this at the time. We were unable to account for the failure in the other case. Of the twenty-five cases falling into this group which were operated upon, the gall bladder was found to contain stones in 76 per cent.; in a further 8 per cent. there was marked cholecystitis, while in another 8 per cent. adhesions around the gall bladder were the most obvious pathological finding. In one of these latter cases, where the adhesions were merely divided and the gall bladder was allowed to remain, the dye test was repeated a fortnight later and a perfectly normal gall bladder was revealed. In one case only of this group the gall bladder was found to be normal at operation; it was not removed, and this patient's symptoms were not relieved.

It is well known that a considerable degree of cholecystitis and even stones can exist undiscovered until the gall bladder is opened and examined, either *in situ* or after removal, and in view of this we consider it the surgeon's duty to remove the gall bladder when the *x*-ray evidence points definitely to disease being present in the organ, even though its external appearance seems normal.

Of the three cases occurring in Group 3 there was one example of an hour-glass gall bladder, and one where the gall bladder filled slowly and had an irregular outline. The third filled and emptied normally, but was abnormal in shape and position. The patient was operated upon and found to have a pyloric ulcer with adhesions to the gall bladder, to account for the *x*-ray findings.

Of the eight cases in Group 4 where a shadow indicative of non-opaque stones was seen, four patients were operated upon and the *x*-ray diagnosis was confirmed. Usually the stones are very definitely outlined by the dye, and in Stewart's[2] opinion this is the most positive finding of all. But in a later paper[3] he expresses a warning against the diagnosis of stones by mottling alone, giving his reason that small circular bubbles of gas in the duodenum often overlap the gall bladder and closely resemble non-opaque stones.

It is in Groups 3 and 5, as Graham points out, that most errors of diagnosis occur. Among our cases which fell into the latter group the gall bladder was still outlined at periods varying from eighteen to thirty-four hours, although several fatty meals had been taken by the patients. In the case of the patient operated upon there was a dense mass of adhesions at the neck. It seems probable that a similar condition will be responsible for the delay in emptying in the case of the remaining instances of this group.

It is perhaps worthy of mention that only in six instances out of our series of 125 cases were opaque gall stones seen on the *x*-ray films.

Conclusions.

1. The success of the oral method depends on obtaining a reliable salt, careful coating and preparation of the capsules, which must be freshly used, together with first-class *x*-ray technique and intelligent co-operation on the part of the patient.

2. Cholecystography by the oral method is easier than the intravenous so far as the preliminaries are concerned, and yields equally satisfactory results from a radiographic point of view.

3. The proceeding is devoid of risk, and the toxic effects are practically negligible.

4. The surgical findings confirm the *x*-ray diagnosis in 94.3 per cent. of the cases.

We wish to thank Dr. R. E. Roberts for allowing us to include some of his private cases, and Mr. D. Douglas-Crawford and Mr. O. Herbert Williams for permission to use the findings in the cases operated on by them.

REFERENCES.

[1] Stewart: *Amer. Journ. Roentgen.*, 1926, xvi, p. 234. [2] Idem, ibid., 1925, xiii, p. 259. [3] Idem, ibid., 1926, xvi, p. 224.

EPIDEMIC ENCEPHALITIS: THE PROPORTION OF PERMANENT RECOVERIES.*

BY

A. GARDNER ROBB, M.B., D.P.H.,

VISITING PHYSICIAN IN CHARGE OF THE BELFAST FEVER HOSPITALS.

I THINK it may be said that, after the passing of the earliest outbreaks of epidemic encephalitis of which this generation of physicians has had experience (six to ten years ago), the percentage of complete recovery was estimated by most writers on the subject at 20 to 30. Later writers express a more guarded opinion and generally record a much lower complete recovery rate. My own experience has been that in every outbreak the complete

* Abstract of a paper read before the Ulster Medical Society on January 27th, 1927.

recovery rate has been very considerably lower than 20 per cent. if the estimate be made, say, two or three years after the acute attack.

In the spring of 1924 an outbreak occurred in Belfast. In the three months April, May, and June 173 cases were admitted to the fever hospitals under my care. Though this outbreak was extensive and sudden it could not be said to have been of more than average severity as the death rate in the acute stage was 12.1 per cent.

These 173 cases form a compact group. Last autumn—that is, after two and a half years—with the assistance of Dr. W. B. Shane I made an attempt to ascertain the then condition of the 152 cases who had recovered from the acute attack. A paper of questions was sent out and replies received from the majority of the patients. Had these replies been taken as correct the figures would have been very different from those finally accepted. Our experience showed that statistics compiled upon such reports are altogether unreliable. Many patients who reported that they had remained quite well from the time of leaving hospital were found on examination to be very far from well; some who had so reported were found to be frankly Parkinsonian, some mentally deficient, etc.; 11 cases could not be traced. We were able to examine over 80 per cent., and received medical reports of the small remainder.

Epidemic Encephalitis: Results 2½ Years after Attack.
(Total cases 173.)

Died in acute stage	21	
Recovered from the acute attack... ...	152	
Of the 152 who recovered:		
Untraced	11	
Examined after 2½ years	141	
Of the 141 examined:		
Apparently well (after 2½ years)	13 = 8.8	per cent.
Died of effects (within 6 months, 2; between 6 and 12 months, 3; between 1 and 2 years, 2)	7 = 4.9	,,
Suffering from nervous symptoms of mild type	10 = 7.0	,,
Showing "changed character"	18 = 12.7	,,
Showing mental symptoms (in mental hospital, 6; not in mental hospitals, 13)	19 = 13.4	,,
In other medical institutions	19 = 13.4	,,
Subject to convulsive attacks (epilepsy?)	2 = 1.4	,,
Showing Parkinsonism (Stage I, 21; Stage II, 42; Stage III, 20)	83 = 58.8	,,
Partially incapacitated for work or school	29 = 20.5	,,
Totally incapacitated for work or school	84 = 59.5	,,

It will be seen that of those who survived the acute attack 8.8 per cent. were found to be well after two and a half years. I have no doubt were these cases again examined at the end of, say, five or six years from the onset this percentage would be further reduced.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

PURULENT PERICHONDRITIS OF THE LARYNX.

CASES of purulent perichondritis of the larynx, when secondary to constitutional disease such as syphilis and tuberculosis, are not of common occurrence. When present as a complication the diagnosis may not be difficult. If secondary to malignant disease it is conceivable that the condition may not be easy to diagnose and the results to the patient may be disastrous. If confronted with a case of this nature when neither syphilis, tuberculosis, nor malignant disease can in any way be used as a guide, then a very careful process of exclusion, in the absence of previous experience, may have to be invoked; in any case the medical man should take the earliest opportunity of calling the laryngologist to his aid. The following case amply illustrates the urgency of these cases.

A woman, aged 61, had been attending her doctor for five weeks, first with hoarseness, and latterly with difficulty in breathing, which had become very much worse; she was sent to hospital with a view to admission.

I found there was marked stridor and slight pain on swallowing; the larynx was more or less fixed and appeared to be pushed forward, and pressure over the front of the larynx caused pain. There was a swelling on the right side of the thyroid cartilage which gave deep fluctuation. On laryngoscopic examination the left ventricular band was found to be red and swollen, obscuring the view. The right vocal cord could be seen to move slightly in abduction and adduction over a yellow swelling which extended across the middle line from right to left in its posterior half. No swelling could be seen in the pharyngeal portion of the cricoid or arytenoid region. The temperature was 101° and the pulse 140. No history of foreign body was elicited; tubercles were not present; the Wassermann test was not performed. A diagnosis of purulent perichondritis was made and immediate operation advised. Under general anaesthesia tracheotomy was performed and an incision made over the site of fluctuation; pus was evacuated and some escaped into the pharynx, but not into the larynx. There was no sequestrum, but roughened cartilage could be felt with the handle of the scalpel through the incision. There can be little doubt that there was a communication with the inferior of the larynx; this suggests the importance of a preliminary tracheotomy in these cases.

The tube was removed on the third day. With the exception of a slight collapse four days after admission, from which she soon recovered, her convalescence was gradual and uneventful. She left hospital on October 23rd looking and feeling well, with voice and breathing normal, and the larynx functioning well.

Although I had no doubt as to the actual condition, the important guides, apart from the appearance of the swelling in the larynx, were (1) deep fluctuation felt on the right side of the thyroid cartilage, (2) the pulse, (3) the temperature. Rise of temperature may be absent when pus is established and locked up, but its presence in this case was an indication of urgency.

If there is a lesson to be learnt it is that the laryngologist should be called to see these cases before the stage of stridor is reached; at any moment a disastrous end may result.

J. A. GIBB, M.D., C.M.,
Honorary Surgeon, Ear, Nose and Throat Department, Kent County Hospital for Diseases of Eye, Ear, Nose and Throat.
Maidstone.

TRANSPOSITION OF VISCERA.

THE following two cases of dextrocardia and transposition of organs, which were found in Arabs of the Sudan, seem worthy of record.

CASE I.

An Arab girl, aged 11, was brought to me suffering from malaria. While feeling for the spleen under the left costal margin I detected what I took to be the clear cut edge of the liver, and palpation of the right side revealed the spleen extending for the breadth of five fingers under the costal margin, with the typical notch opening to the left. The apex beat of the heart was visible in the fifth right interspace, one centimetre inside the right nipple line, and auscultation proved it to be a case of true dextrocardia. The girl was quite unaware of her condition, and the mother, father, and two sisters, who were examined, were found to have the heart in the normal position on the left side.

CASE II.

Within a week of seeing the first patient, a man, aged 25, came to me because of chest trouble. I found tuberculosis of the left apex, but could hear no heart sounds on the left side. Inspection revealed a faint apex beat in the fifth right interspace, half a centimetre inside the right nipple line. Percussion on the left side showed an area of dullness identical in size with the normal hepatic dullness, and in the corresponding position. The edge of the liver could just be palpated under the left costal margin. The spleen was not felt on the right side. The patient was fully aware of the abnormal position of the heart, but had kept the knowledge of it to himself fearing ridicule.

I can find no references in the literature to suggest that this condition is more common among the coloured or less civilized races, and the discovery of two such cases within so short a period and in the same locality may be pure coincidence.

I have to thank the Director of the Sudan Medical Service for permission to publish this note.

A. CRUICKSHANK, M.B., Ch.B.,
Sudan Medical Service.
Khartoum.

LABOUR RETARDED BY HYDROCEPHALUS TERMINATED BY DRAINING A SPINA BIFIDA.

I WAS called by a midwife to attend a woman in her third confinement. She had been in labour for six hours. The os was fully dilated. The presentation was a breech with extended legs. Under anaesthesia the legs were brought down and delivered with the body. A spina bifida was present with complete absence of the posterior arch of the spinal canal in the lower dorsal and upper lumbar region. No progress was made in labour, and a large hydrocephalus was diagnosed. Having a ready track to the ventricles it was deemed advisable to try to use it. The inner tube

of a Collins uterine douche tube was passed up the spinal canal into the ventricles and two quarts of fluid were drawn off. The uterine contractions immediately became strong and the flattened head was delivered. The puerperium was normal.

Alfreton. RAYMOND G. BINGHAM.

British Medical Association.

CLINICAL AND SCIENTIFIC PROCEEDINGS.

STAFFORDSHIRE BRANCH.

Ovarian Endometriomata.

A MEETING of the Staffordshire Branch was held at Walsall on March 17th. In the absence of the President (Mr. W. C. Allardice), Dr. J. A. M. CLARKE took the chair.

Mr. S. W. MASLEN JONES read a paper on ovarian endometriomata and showed specimens which he had removed at operation. He discussed the causation of these tumours and summarized the rival theories held by Vernon Bailey, Sampson, and other workers. He explained the pathology of such tumours and emphasized the fact that the aberrant endometrium, which was the basis of the pathological condition, exercised its effect principally by a production of menstrual flux at a time which corresponded with the ordinary period of menstruation in the uterine mucosa. This production led to the formation of cystic cavities containing a chocolate-coloured fluid. A discussion followed regarding the significance of the occurrence of endometriomata in sites other than the ovary.

Lead Treatment of Cancer.

Dr. S. C. DYKE read a paper on the lead treatment of cancer. He recounted his experiences at Professor Blair Bell's clinic at Liverpool, and explained that the reasoned basis of the treatment was the special toxic effect of lead upon cancerous tissue. One of the greatest difficulties in the treatment was that the general deleterious effect upon the patient might outrun the specific local effect upon the tumour; the best results would be obtained consequently when a lead product was found which had a minimum general toxicity combined with a maximum local effect upon malignant cells. Dr. Dyke reviewed several cases which he had seen undergoing lead treatment, and he mentioned the particularly good results which had been produced in some cases in which partial removal of an inoperable tumour had been combined with treatment by lead. A discussion followed which related particularly to points in the technique of the treatment.

Medicine in the Past.

Dr. F. G. LAYTON read a paper on mediaeval medicine. He emphasized the benefits which would accrue to practising physicians if they had a greater knowledge of the history of medicine than was commonly the case, and he contended that many of the old procedures were much more logical than many methods of therapy which were practised at the present day. He indicated the lines upon which the ancients arrived at a diagnosis, and held that a knowledge of human nature was perhaps even more common among the old-time Egyptian physicians than it was among present-day medical men. He made a plea for treatment by dietetics and regimen, both of which he considered should have a more important place in therapy than was at present the case. A discussion followed contrasting modern with more old-fashioned methods.

The Eyes in Diagnosis.

Dr. G. F. HAYCRAFT read a paper on the pupils as an aid to general diagnosis, and gave a brief but very informative summary of the anatomy and physiology of the iris. He then recounted important points in the causation, diagnosis, and treatment of iritis. Turning from inflammatory conditions, the speaker showed how the iris might be affected in a large number of general diseases. The subsequent discussion centred round the effects of tuberculous disease on the iris, these effects being produced either by local interference with the nerve supply of the iris musculature or by the general asthenic condition seen in late stages of the disease.

Reports of Societies.

RETROPERITONEAL FIBROID.

AT a meeting of the Section of Obstetrics of the Royal Academy of Medicine in Ireland on March 11th, the President, Dr. D. G. MADILL, in the chair, Dr. D. CANNON read notes on a case of retroperitoneal fibroid, and showed a specimen.

A woman aged 36, with enlargement of the abdomen, had been married for four years, but had no children. She had been operated on for appendicitis. She looked worn, tired, and rather older than her years. Her periods were normal, except for slight dysmenorrhoea, and her heart, lungs, and kidneys appeared to be quite normal. Inspection and abdominal palpation revealed a symmetrical semi-solid tumour, which filled the whole of the abdomen. On bimanual examination the tumour appeared as a swelling of the posterior fornix, extending more to the left than to the right. By vaginal examination its stony hardness contrasted with the almost cystic feeling of the abdominal wall. The cervix uteri could be recognized high up underneath the symphysis to the right side. The diagnosis lay between an ovarian cyst complicated by a cervical fibroid, or a cervical fibroid or broad ligament fibroid which had enlarged to such an extent as to become an abdominal tumour. When the abdomen was opened the latter condition was found. During the process of enucleation severe bleeding was encountered, and so a rapid enucleation of the upper pole of the tumour was performed. Towels wrung out of hot saline were packed into the bed from which a portion of the tumour had been enucleated. The patient suffered from shock at this stage of the operation, but recovered after a short time. The lower pole of the tumour was enucleated with ease, and with scarcely any bleeding. The left ureter, which was displaced outwards, was followed to its disappearance into the parametrium, and was intact. The uterus, which had reached the level of the umbilicus, was pushed well over to the right side and the cervix was elongated. The peritoneum of the posterior wall of the left broad ligament and Douglas's pouch was spread over the intestines like a thick apron, and was adherent to them. All bleeding points were carefully secured. At this stage the peritoneum was separated quite easily from the intestines, and omental adhesions were tied and divided. The excess of peritoneum was removed, and the margin of the rent which was oozing blood was sewn all the way round with continuous catgut. The thickened peritoneum presented the appearance of the thickened tunica vaginalis seen in chronic hydrocele. The cavity from which the tumour had been enucleated was now considerably reduced. It was obliterated by mattress sutures, and rubber tubing which had been split and threaded with gauze was inserted into the obliterated portion of the cavity and taken out at the lower angle of the wound. The abdomen was closed, and the patient left the table in fair condition, but collapsed some hours later and died. There was no evidence of bleeding from the tubes.

Dr. CANNON thought that death was due to secondary shock as a result of haemorrhage; the patient had certainly not died from primary shock. He believed that she would not have died if he had performed a complete hysterectomy after the tumour was enucleated. In this way he could have tied off the main source of blood supply to the pelvis, and could have drained the retroperitoneal space through the vagina. The uterus could easily have been removed in the circumstances; it was only left because the patient was very anxious to have a child. During the time that Dr. Cannon had charge of the Gynaecological Department of St. Mary's Infirmary, Highgate, he had encountered four retroperitoneal tumours. They were all small; three were parovarian cysts, and one was fibroid. They had presented no difficulties. The present case belonged to a different category. Owing to the size of the tumour, the cavity from which it was enucleated was difficult to obliterate; it was undergoing degenerative changes, and had probably been infected; the cavity was therefore probably a vascular one.

The PRESIDENT said that this was one of the largest fibroids he had ever seen which had been enucleated without removal of the uterus. It was difficult to say what more could have been done, as there must have been severe haemorrhage through the bed of the myoma.

Dr. GIBBON FITZGIBBON thought that the position of the tumour and its size made the case similar to that of full-term ectopic pregnancy. He had recently seen a case of this, and had done exactly the same as Dr. Cannon. When the patient left the operating table he was very satisfied with her, but she died later, and he thought the cause of death was venous bleeding from the parametrium. When a patient came round from an anaesthetic, and venous oozing of blood started, it was frequently the cause of

death. In a case such as Dr. Cannon's he would certainly have saved the uterus.

Dr. LOUIS CASSIDY did not agree that it was wise to leave the uterus behind in this case. In patients who had a tumour of this nature he thought that the probabilities of pregnancy after removal of the tumour were extremely small. He mentioned the importance of testing the patency of the tubes before opening the abdomen, since unless the tubes were patent pregnancy could not take place. He thought that trusting to the closing of the bed of the tumour had proved to be ill founded. He would have performed complete hysterectomy in this case. If the tubes were not patent, the only reason for leaving the uterus was to preserve the menses. Myomectomy was quite a safe operation, but should be preceded by testing the tubes.

Dr. BETHEL SOLOMONS said that in such a case it was impossible to say whether hysterectomy or myomectomy should have been performed without being present. When there was reasonable doubt at the time of operation, hysterectomy was preferable in spite of the wish of the patient that the uterus should be preserved. Many myomas were infected, and this must be borne in mind when considering the question of radical or palliative measures. Secondary haemorrhage was the cause of death in this case. Haemorrhage during the operation of myomectomy could be overcome by the use of Bonney's clamp and applying a ring forceps to the ovarian vessels; it would, however, have been impossible to use the former in this instance.

Dr. A. H. DAVIDSON believed that in a case of cervical myoma, where the cervix was elongated, this elongation would be a point against preserving the uterus. He doubted whether lengthening of the cervix was likely to be reduced after removal of the myoma. Dr. Schiller had stated that myomata were signs of ovarian disease, and that if the ovary of a woman who had myomata was transplanted into a woman who had not, myomata would grow in the uterus of this latter patient.

Dr. CANNON, replying, said that the view in Vienna was that sterility and fibroids were associated. After he had enucleated the tumour he could not see the uterus for a long time, and he then found that it was high up in the abdomen on the opposite side. It was difficult to know whether the uterus would remain hypertrophied after the operation or not. The patient had certainly died from secondary haemorrhage, and this haemorrhage was, he thought, due to ovarian dysfunction.

Hyperemesis Gravidarum.

Dr. LOUIS CASSIDY read a report on three cases of hyperemesis gravidarum. He said that vomiting in pregnancy must be distinguished from affections of the gastro-intestinal tract, uraemia, tumours of the brain or spinal cord, meningitis, and latent pyelitis, and from symptoms of some other toxaemia of pregnancy, such as pre-eclampsia. The term must be reserved for those cases where vomiting and pregnancy were synchronous and where no associated cause other than pregnancy existed to account for the vomiting. Statistics of the occurrence of morning sickness were given to show that it was more frequent in primiparae than in multiparae; it occurred between the eighth and sixteenth weeks. He suggested that it affected those carrying a male rather than a female child. He quoted Lindemann's *post-mortem* findings and Miller's work in connexion with vagus control as it affected reflex cases. The psychical nature of some cases was stressed, but as against this it was shown that dogs and cats suffered from a similar affection in pregnancy. Blame had been laid at the door of the endocrine system, and some authors (principally French) had mentioned deficiency in the corpus luteum, which organ was supposed to counteract the toxins generated by the chorionic villi. The occurrence of hyperemesis in conjunction with vesicular mole was as high as 19 in 27 cases, according to Pinard. Van den Bergh's test for bilirubin in the blood had, in the hands of Seitz, shown increase in the case of hyperemesis over and above the normal increase during pregnancy. In those cases of neurotic or reflex origin the clinical picture was intense thirst, bodily weakness, and emaciation; these, though distressing to the patient, gave no real cause for alarm, and disappeared as pregnancy advanced. In the toxic variety, on the other hand, the pulse rate was increased in spite of rest in bed; the tongue was furred and dry; the skin was dry; the urine was diminished in quantity, and contained pathological elements such as albumin, casts, acetone; coma, delirium, and insomnia might occur, and the condition was very grave. Clinical notes of three patients treated within the past twelve months were given, each of whom recovered, though treated on different lines.

The PRESIDENT referred to a discussion on hyperemesis in early pregnancy at the Obstetrical Section in the previous year, and to the fact that Dr. FitzGibbon had then laid great stress on the neurotic element in these cases, and their treatment by psychotherapy. Very many of these cases were probably toxic in origin. The President had tried the administration of thyroid extract in two cases, but had not found it of any value. He was interested to note that in one case mentioned by Dr. Cassidy the use of corpus luteum had not been beneficial, though the injection of the patient's own blood had been effective; in another case potassium bromide had brought about cure. It was always taught that if starvation, thorough elimination, and rectal enemata did not stop the vomiting in these cases that pregnancy should be ended; yet Dr. Cassidy's three patients had been treated in different ways, and it had not been necessary to stop pregnancy in any of them.

Dr. BETHEL SOLOMONS said that if women were unaware that vomiting occurred in pregnancy few would suffer from it. Patients were often in doubt as to their condition, because they had been told by their friends that they ought to vomit, and this symptom was absent. He was a firm believer in the neurotic or psychological element as an etiological factor in the mild and severe forms of vomiting. Irrigation of the stomach had a good effect in all; when performed gently it caused no shock, and it had the excellent effect of removing the backflow from the liver and of curing hysterical patients because of its unpleasantness. Another advantage was that purgatives could be left in the stomach. He believed also in the value of removing such things as basins from the patient's bedside, and in putting the patient on a full diet free from all fats. While holding the view that most patients were of the psychological type, he admitted that there were a few who were toxaemic and must be treated as such. The need to perform therapeutic abortion seldom arose.

Dr. GIBBON FITZGIBBON thought the psychical element in these cases was very strong. Patients fell into the habit of vomiting, and therefore thought they should vomit. He had found, while Master of the Rotunda Hospital, that patients generally responded to starvation, elimination, and enemata, and he had had to induce abortion in only two cases. In one case, even after abortion, the patient had died. These cases seemed to him to respond to all sorts of treatment, and the more he saw of them the more he was convinced of the psychical element in them. In some cases there was reflex vomiting; sometimes, in cases of retroverted uterus, after the uterus was put back the vomiting ceased. Some patients suffered from excessive salivation, as well as vomiting. He did not think that there was any reason at all for believing in the toxic element in these cases. Vomiting was always more severe in multiparae than in primiparae. In one case he had tried injecting human blood into the patient, but without any result. He thought there was far too much fear of letting these patients carry on, and that pregnancy should be allowed to continue up to the fourteenth or sixteenth week; different methods of treatment should be tried till then to stop the vomiting before abortion was induced.

Dr. D. CANNON asked if any effort had been made by gynaecologists to visualize the mechanism of the stomach in these cases. He had seen two cases which had been investigated on these lines; it had been proved that achlorhydria was present, and that there was not much hydrochloric acid in the stomach. He referred to work by Professor Wilkie in this connexion, and also to a German investigator, who had shown that over-regurgitation of bile into the stomach would cause morning vomiting and other symptoms in these cases, and who suggested the administration

of atropine sulphate. He considered these cases functional in nature, and not toxic. He wondered how a retroverted uterus could cause gastric symptoms, and yet he had often found that simple correction of the uterus did effect a cure in these cases. An American investigator had also proved that duodenal stasis was present.

Dr. G. TIERNEY thought it was very difficult to decide which cases were toxic in origin and which were not. He considered that a number of these cases were associated with a psychic element, as well as with a toxic element. He mentioned a paper recently published by Dr. Leavy of New Orleans, in which it was stated as evidence of toxaemia that acetone was found in the urine, and diminution in the blood sugar and in the CO_2 combining power of the blood. He reported six cases in or about the fourth month of pregnancy. After ineffective treatment on general lines he had treated them with insulin and glucose. One patient who was four months pregnant, and had been vomiting continuously for three weeks, was in such a state that he thought he would have to resort to therapeutic abortion, but after the intravenous injection of insulin and glucose the vomiting ceased, and she went on to full term. The glucose was given in a 10 per cent. solution intravenously.

Dr. E. HARVEY believed that in the cases which were helped by insulin acidosis had been the cause of the vomiting, and therefore insulin would cure them; he did not think that it would necessarily work in other cases in which acidosis was not the cause of the vomiting.

Dr. CASSIDY, replying, did not think the psychical effect of washing out the stomach in these cases would be sufficient to justify the distress which it would cause to patients. Most of these patients were of a neurotic type. In most cases vomiting developed about the eighth week, and improved about the sixteenth week. It seemed to him that as the resisting powers of the body were increased the vomiting ceased. In any case of starvation acetone would be found in the urine, and therefore he did not think that finding it should be taken as pathognomonic of hyperemesis gravidarum. An increase of bilirubin in the serum was, he thought, a sign that the case might be toxic. From the clinical point of view it seemed to him that the important thing was to distinguish between the toxaemic and the purely neurotic case.

MEDICAL ASPECTS OF THE MATERNAL INSTINCT.

AT a meeting of the London Association of the Medical Women's Federation, held on February 22nd, at the British Medical Association House, with Miss E. BOLTON, the President, in the chair, Dr. ELIZABETH CASSON read a paper on maternal instinct in medicine.

Dr. Casson suggested that, while the immense strides made in neurology by the careful observations of facts and their subsequent study were frequently acknowledged, the study of instinctive behaviour was considerably neglected in medicine. Just as in the spinal cord, medulla, and mid-brain certain tracts were laid down in every individual, so certain definite instinctive responses to set stimuli would occur. Although it was not yet known exactly in what area of the brain these neuronic patterns were prepared, yet it seemed certain that they were as definitely laid to develop at various stages in the life of the animal as were the rubro-spinal and pyramidal tracts. A low-grade mental defective had no instinct for obtaining food, no curiosity, and no sense of fear, and had, in consequence, to be cared for as an infant all his life; but the normal infant developed all these instinctive reactions at the right time, and as he grew up, and during his whole life, every activity depended on these same primitive instinctive reactions common to all members of the human race, and, to a large extent, to all mammals. To the modern psychologist the play of primitive instinctive reactions was as unceasing in every activity as was that of the nerves governing the limbs. In every instance of behaviour, normal or abnormal, primitive instinct was demonstrable, and its recognition and study was necessary for diagnosis and subsequent treatment of any abnormal behaviour. McDougall had pointed out that certain unmistakable specific primary emotions could be observed in animals. They were best classified according to the three great ends of the life force—self preservation, race preservation, and the herd instinct. There were also certain other instinctive reactions with less specific ends. These were anger, aroused when any instinct was thwarted; curiosity, with its impulse to investigate anything outside the previous experience of the subject, which formed the basis of all intellectual development and provided the impulse for all research; joy, felt when any instinct was gratified; and grief, when any instinct had failed in its gratification. The best exposition of the parental instinct was that given by McDougall.

Discussing what was meant by the maternal instinct, Dr. Casson remarked that there were three processes in every reaction occurring in the nervous system—stimulus, appreciation, and either action or a strong impulse to action. The appreciation usually showed itself in what was called emotion. The stimulus and the resulting action might vary according to the experience and mental make-up of the individual, but the emotion—for example, of fear—was specific and unmistakable. The emotion specific to the maternal instinct was a yearning to cherish. There was unfortunately no word for it, but it would be heard expressed as an inarticulate sound by the women in a cinema audience when a child suddenly appeared on the screen. The mental patient, whether neurotic or psychotic, was to a physician in the position of a child, and provided a stimulus to the parental instinct. This might be the basis of the resentment felt by the doctor at the slightest interference with his or her treatment. Who had not met the angry parent, when someone suggested that she might bring up her child differently? In suggesting the maternal instinct as a subject for research there were a few points to be noticed—the age at which it appeared, its physical basis, its abnormalities, its relation to infanticide, its absence in advanced states of dementia. Sometimes the return of affection and pity for fellow sufferers or nurses was the first sign of recovery in mental patients. It was not easy to provide suitable stimuli for the maternal instinct in a mental hospital. Babies were scarce, and except for fellow patients there was no one to mother. Dogs and cats were the best substitutes. Where they could not be persuaded to mother people, patients might be able to express the allied instinct of nest-building and home-making in crafts and other branches of occupational therapy. An instinct might be abnormal in its unusual strength—for example, in cranks who kept twenty cats or pestered their friends for subscriptions to antivivisection societies. It might be aroused by an abnormal stimulus, or express itself unusually—Mrs. Jellyby (in *Bleak House*) was a notable example. A patient who had lost a baby, or had been nursing some other relative who had died, might thereafter lavish upon herself all the care and attention she had been giving to the child. Sometimes when the instinct was unsatisfied or repressed, the patients lost all touch with reality: they had babies in fantasy; in a mental hospital one might find an old dement gently nursing a pillow. One of Dr. Casson's patients, who had been aggressive, noisy, and abusive, became a different person after she was given a doll.

The outcome of Dr. Casson's experience was that, while it was not a waste of time to investigate blood pressure and knee-jerks, it was equally worth while to investigate the primitive instincts. If a doctor had been called in to discover early that the instincts of sleep and taking food were deranged in the puerperal cases investigated so carefully later at Broadmoor, then the babies would not have been killed by their insane mothers. If investigations were made of the maternal instincts of disgruntled women patients, much would be discovered. The profession was willing to supply artificial limbs; it might equally well be their job to supply an artificial baby. The maternal instinct was at least as strong as the mating instinct in most women, and the doctors must be on the look-out for its repression or wrong expression. Some women realized their need and knew why they were fretting.

Others did not know what was wrong with them, and did not realize that they needed the natural outlet of devoted service. They were the kind who kept well by doing war work and collapsed when they were left without it. For them a cure must be found; they must be persuaded to adopt a child, or guided into teaching, nursing, police, infant welfare work, management of working-class houses, or even into politics. By this means a selfish, self-centred, miserable woman might sometimes be transformed into a happy, useful citizen.

PATENT VENTRICULAR SEPTUM.

A CLINICAL meeting of the Devon and Exeter Medico-Chirurgical Society was held on March 17th, the President, Mr. A. L. CANDLER, being in the chair.

Dr. F. A. ROPER showed a boy, aged 9, admitted to hospital complaining of shortness of breath; it was stated that he had been "born with a bad heart." The apex beat was in the mammary line in the fifth space; there was a well marked systolic thrill and a loud to-and-fro precordial murmur. The pulse rate was regular at 90, and the blood pressure was 124/52. There was no cyanosis.

Dr. T. R. WHIPHAM said that from the point of view of diagnosis the more such cases were studied the more difficult the interpretation seemed to be. In the present case patency of the ductus arteriosus appeared to be the more probable solution. He based his opinion upon the intensification of the murmurs in the pulmonary area, but said that a previous patient with similar signs had entirely misled him, owing to the fact that the diagnosis was made during the first of two separate residences in hospital when the temperature was afebrile throughout, in contrast with the second period in hospital, when a high temperature and other constitutional phenomena were present. Eventually the case proved to be one of infective endocarditis. The *post-mortem* examination had revealed a clot in the pulmonary artery, but no congenital lesion.

Dr. G. L. THORNTON called attention to the wide disparity in the readings of the systolic and diastolic blood pressures, and asked Dr. Roper if this could be reconciled with a diagnosis of patent ductus arteriosus.

Dr. ROPER replied that he would hesitate before making a diagnosis of patent ductus arteriosus on the grounds that there was no cyanosis; there was no polycythaemia as evidenced by the blood count; the murmurs were spaced rather than appearing as one continuous rumble; there was wide separation of the blood-pressure readings. He suggested that patency of the ventricular septum was the most probable diagnosis.

Syringomyelia.

Dr. R. N. CRAIG showed a case of syringomyelia in a boy, aged 16, with a history of loss of power in both thumbs for some months. Then followed difficulty in holding things and in appreciating heat and cold. There was well marked wasting of the small muscles of both thumbs and the interossei of both hands, which were cold and cyanosed. No other neurological signs were present, and the diagnosis lay between syringomyelia and juvenile progressive muscular atrophy.

Dr. T. R. WHIPHAM did not consider that the tests for heat and cold were sufficiently conclusive in this case to warrant a diagnosis of syringomyelia. The signs present would, in his opinion, fit in quite well with juvenile progressing muscular atrophy.

Dr. F. A. ROPER considered that the juvenile type of progressive muscular atrophy occurring in the hands must be very rare, if not altogether unknown. He had also observed scars on the fingers which might well be attributed to blistering of the skin.

Dr. R. N. CRAIG remarked that there was absence of fibrillary muscular twitching, but did not agree that the age made the diagnosis of progressive muscular atrophy impossible. In addition to the signs already mentioned the boy had a definite scoliosis, which was so often found in association with syringomyelia.

Cerebral Embolism Secondary to Mitral Stenosis.

Dr. CRAIG showed also a boy, aged 16, with cerebral embolism secondary to mitral stenosis, who gave no history of rheumatic fever or other febrile complaint. Two and a half years ago he "fainted" and was unconscious for thirty-six hours; on recovery of consciousness he was found to have paralysis of the right arm and leg. This had gradually cleared up, but there remained wasting of the small muscles of the thumb, and to a lesser extent of the interossei of the right hand. There had been no change in sensation. Examination of the heart showed a characteristic thrill and murmur. The embolus was probably auricular in origin.

Other Clinical Cases.

Mr. G. P. HAWKER showed a middle-aged man with paresis of the right seventh, sixth, and third nerves. There was a fortnight's history of diplopia, and ptosis had been present for a week. Six weeks previously he had complained of pain over the right side of his face, but there was no record of any rash, vomiting, headache, or catarrh of the upper respiratory tract. The pupils were equal, but sluggish in their reaction to light; accommodation was normal. The movements of the right eyeball were very deficient, and of the left unimpaired. Both fundi were normal. The knee-jerks were exaggerated, but there was no inco-ordination or Rombergism.

Dr. CRAIG suggested treatment by a combination of iodides and mercury by the mouth, and neosalvarsan by injection, if a syphilitic diagnosis was established. Mr. HAWKER said he had found potassium iodide and mercury, by mouth only, to answer well in similar affections.

Mr. R. WAYLAND SMITH showed, on behalf of Mr. DYBALL, a young unmarried woman with an enlarged submaxillary gland of several months' duration. The swelling varied in size from time to time, but not in relation to meals. The subjective symptoms were slight. The PRESIDENT remarked upon the difficulty in discriminating between an enlarged submaxillary salivary gland and an enlarged lymphatic gland beneath the jaw, and quoted a case where calculi were found on incision of what had seemed to be an inflamed lymphatic gland. Dr. SHAW had seen an obscure case where the correct diagnosis eventually proved to be endothelioma of the salivary gland.

Mr. NORMAN LOCK and Dr. MILLER MUIR showed a woman, aged 68, with atrophic scirrhus of the right breast of some seven or eight years' duration. There was a small lump in the left breast also. In spite of the extensive ulceration of the right breast, there was but slight invasion of the axilla. The patient was being treated by deep *x*-ray exposure. Dr. SHAW inquired if there was any risk of the *x*-ray treatment lighting up the growth. Dr. MILLER MUIR did not think there was any danger as regards stimulating the carcinoma, and he considered that the prognosis was hopeful with continued *x*-ray treatment, the surface being maintained aseptic and the growth at bay.

Mr. NORMAN LOCK showed a girl, aged 6, with ischaemic contraction of the left leg and scleroderma of the arm. The condition was first noticed after whooping-cough in the autumn of 1925; there was no complaint of pain. On admission to hospital the knee was stiff and swollen; there was three-quarters of an inch wasting of the left calf and slight wasting in the thigh also, the muscles of the latter being hard and stiff. There was scleroderma of the right side of the abdomen. Mr. Lock had exposed the external iliac artery, which was found to be very small; the periarterial coat was injected with absolute alcohol. The left arm had become affected last December. The patient was now being treated with radiant heat. Dr. R. N. CRAIG suggested a lesion of the suprarenals as a possible cause. The PRESIDENT commented on the small size of the artery, and said that sometimes it was wise in such cases to ligature the vein coincidently, thus avoiding a reflux through the venous channels. Mr. LOCK thought that the injections of alcohol had resulted in raising the temperature; he suggested a sympathetic cause. Nothing was found to support the possibility of a tumour or lesion of the spinal cord being responsible.

Mr. R. WAYLAND SMITH showed a case of uterine fibroid undergoing mucoid degeneration in a spinster, aged 49, who had suffered from haemorrhage but not dysmenorrhoea. When first seen there was a hypogastric tumour of the size of a five months pregnancy. Eventually the tumour, weighing 5½ lb., was removed, there being considerable oedema in the left broad ligament.

Mr. Wayland Smith showed also a man, aged 56, with osteo-arthritis of the left hip and spondylitis of the cervical and lumbar regions of the spine. Dental treatment, massage, radiant heat, and iodolysin had all proved futile, but marked improvement in movement and relief of pain had followed ultra-violet radiation. DR. MILLER MUIR stated that, although structurally no improvement could be seen by radiographic examination, yet undoubtedly the symptoms of inflammation had been relieved. Careful dosing of ultra-violet rays was necessary, since otherwise this treatment might actually increase the pain. Mr. WAYLAND SMITH said that benefit had been noticeable after three weeks' treatment.

The PRESIDENT exhibited a fibrosarcoma of the mesentery from a man aged 68. The growth caused intestinal obstruction of a chronic type and was found to arise from the mesentery of the ileum, the mesenteric vessels being thrombosed, and the gut of a plum colour. The President showed also, with Dr. ADDINGTON DATE, a right testicle—becoming gangrenous from torsion—which had been removed from a man aged 52. He was first seen forty-eight hours from the apparent onset and in great pain; the scrotum was red, but the testicle was not enlarged.

THE INCIDENCE OF PNEUMONIA.

AT a meeting of the Section of Epidemiology and State Medicine of the Royal Society of Medicine held on March 25th, with the President, Dr. S. MONCKTON COPEMAN, F.R.S., in the chair, Dr. W. STC. MCCLURE read a paper on the incidence of pneumonia.

Dr. McClure called attention to the heavy mortality due to pneumonia and bronchitis and the unfavourable contrast between the north and south of England in this respect. By means of statistical tables and charts he indicated the correlation between mortality from pneumonia and air temperature, and pointed out that the statistical relation between mortality from respiratory diseases and fogginess was not clear-cut. He referred to the importance of the occlusion of ultra-violet light, quite apart from obvious fogs, which was a disadvantage of many northern cities. Dr. McClure presented much statistical evidence to the effect that domestic overcrowding and overcrowding upon the unit of area were important etiological factors of pneumonia. In his opinion "every additional open space provided in our towns, every slum area demolished, whether large or small, every effort made to clear the centre of our cities and to rehouse under hygienic conditions, will tend to reduce the mortality from these diseases."

In the course of the subsequent discussion Sir WILLIAM HAMER commented upon the analogy between the present position and one of Sydenham's epidemic constitutions. Dr. M. GREENWOOD quoted evidence to the effect that the pneumonia of childhood and adult life, but not of old age, was highly correlated with indices of domestic overcrowding. Dr. G. C. TROTTER thought the importance of nursing, its provision in overcrowded areas, was very great. Other speakers emphasized the importance of habits of life and adequate housing.

JAMES MACKENZIE INSTITUTE.

The Normal Temperature and Pulse Rate.

DR. PATON, on March 8th, read a paper on the normal temperature and pulse. Referring to the common belief that 98.4° F. was the normal temperature of the body, he said that it was not generally appreciated that this figure represented the mean of continuous readings during the twenty-four hours. Morning and evening records, as taken clinically, so rarely reached this degree in health that a reading of 98.4° F. should be looked upon with suspicion. In his school work he recorded the temperature night and morning of any pupil who might possibly have been exposed to infection, and he isolated the child if 98.4° F. was reached, provided any other symptom of departure from health was detected. By this plan he had often segregated cases of the exanthemata before they had given rise to infection, epidemic outbreaks being thus averted. In support of the view that a temperature of 98.4° was rarely recorded in health, the lecturer exhibited charts from sixty-one healthy girls in whom the morning and evening temperatures had been recorded for sixteen days. The temperatures were taken orally with standard thermometers, and the actual observations made numbered 2,169. A reading of 98.4° F. or upwards was obtained only on 225 occasions. Ten of the girls examined did not reach 98.4° once during the sixteen days. This agreed with his clinical observation that a temperature of 98.4° was commonly an early sign of a disturbance of health. The level of temperature in convalescence from illness, usually regarded as subnormal, was the same as that exhibited by these healthy girls. As a result of his observation his considered opinion was that the normal temperature from the clinical point of view must be regarded as nearer 97.4° than 98.4°. He suggested that the most valuable guide in deciding whether a border-line temperature was a healthy phenomenon, or was due to the invasion of disease, was obtained by observation of the pulse. If this was increased in rate, or if respiratory arrhythmia was absent, a temperature of 98.4° could not be regarded as physiological. Charts were shown from cases of measles illustrating the fact that a rise of pulse rate usually accompanied, if it did not precede, the initial rise of temperature, and that an increase of rate persisted after the temperature had reached its natural level in convalescence. Occasionally, however, a rise of temperature might occur before the pulse rate was disturbed. He added that it was obvious from these facts that the increase of pulse rate was not due to the pyrexia alone, but that both were due to the presence of toxins. It would appear that the mechanism regulating cardiac action might be more sensitive to some of these toxins than were the processes regulating bodily heat.

Herpes Zoster.

In a communication to the Institute on March 15th, Dr. BRYSON described a series of cases of herpes zoster which had come under his observation during the past seven years. In contrast to Head's record of age incidence, he had found the condition more frequent in patients over 25. He had found no evidence of epidemicity or relation to chicken-pox. Pain was usually a marked symptom and increased in severity with the age of the patient. The pain might be referred to a position apart from the rash. In one of his cases the attack was heralded by severe pain on the radial side of the left forearm accompanied by hyperaesthesia, whilst the rash appeared on the chest over the distribution of the second and third dorsal nerves. The disease had many years ago arrested the attention of Sir James Mackenzie. The definite skin and nerve lesions with the associated sensation provided peculiar opportunities for the study of symptomatology. If the symptoms of herpes zoster could be accounted for we should be well on the way to explain all symptoms. The lecturer pointed out that all afferent pathways were the afferent tracts of reflexes having some other end-result than sensation; that sensation was the concomitant of a reflex, and that the reflex involved in the nerve lesion was probably a skin capillary reflex. The skin lesion occurred over papillae where the capillaries were most numerous. It was curious that tactile sensation was not interrupted considering the nature of the lesion. Anaesthesia was not a symptom; indeed, hyperaesthesia was usual. Dr. Bryson threw out the suggestion that pain arose on the same reflex to which the thermal sensations were concomitant, in all likelihood a vascular one. Hyperalgesia was due to an interaction occurring in the "neopallium" between the impulses of normal tactile sensation and those arriving from the site of a lesion, not, as has hitherto been represented, occurring in the cord.

THE AUSTRALASIAN MEDICAL CONGRESS
OF THE
BRITISH MEDICAL ASSOCIATION,
DUNEDIN, NEW ZEALAND.

(Continued from page 587.)

THE SCIENTIFIC SECTIONS.

THE scientific and clinical part of the Congress programme included meetings of the twelve Sections; fourteen joint meetings, in which several Sections combined; a special evening discussion on the mutual relations of the State, the hospitals, and general practitioners; and clinical demonstrations each morning from 8 to 9.30.

SECTION OF MEDICINE.

In addition to taking part in seven combined meetings, this Section devoted two sessions to renal and blood conditions respectively. In the first of these sessions Dr. W. RAY (South Australia) described an epidemic of streptococcal nephritis, and Dr. S. D. RHIND (New Zealand) discussed renal efficiency with reference to the value of the various tests. The biochemical tests in common use were not very satisfactory in medicine, but served to distinguish between functional and post-nephritic albuminuria, and to assist in regulating the diet in nephritis. In obstetrics they indicated the cases of albuminuria in which pregnancy had to be terminated, and in surgery the suitability for operation in urinary cases. The estimation of nitrogen in the saliva was an easy and rapidly completed experiment from which the blood nitrogen could be inferred with a high degree of accuracy.

Dr. J. V. J. DUHIG (Queensland) dealt with the subject of diet in renal disease.

Professor WITHERINGTON STUMP (New South Wales) demonstrated the process of blood formation. Microphotographs were shown to illustrate the production of white and of red blood corpuscles in the ends of developing long bones. The stages were shown from a syncytial arrangement to a differentiated cell, the nucleus of which underwent changes resulting in the appearance of the red and white cell series. The development of giant cells was also shown. The special cells of developing bone were contrasted with the blood elements.

Dr. D. E. FENWICK (New Zealand) outlined the existing speculations as to the cause of pernicious anaemia, with special reference to the part played by the achlorhydria. A cure could not be claimed unless there was a return of hydrochloric acid secretion, with assurance that it was not merely a prolonged remission. The merits of the different means of treatment were discussed—the administration of sufficient hydrochloric acid, the treatment of focal sepsis, the administration of arsenic, preferably by mouth, and blood transfusion as a means of tiding a patient over a critical period. He doubted the value of splenectomy, but he had had no personal experience of it.

Dr. D. W. CARMALT-JONES (New Zealand) regarded the treatment of pernicious anaemia by repeated blood transfusions of about ten ounces of suitable blood at intervals between two and four weeks, for six months if necessary, as a most important addition to ordinary arsenical medication. A patient who did not show marked and sustained improvement with this treatment was probably suffering from some disease other than pernicious anaemia.

SECTION OF SURGERY.

A discussion on the surgical aspects of goitre was opened by Mr. BASIL KILVINGTON (Victoria), the President of the Section. He said that the surgical treatment of goitres centred mainly around those enlargements associated with toxic symptoms; of these there were two main types—the exophthalmic and the hyperfunctioning adenomas. Toxic goitres, with the exception of very mild forms, had now become entirely a surgical problem; the results of medical treatment were unsatisfactory, since when rest and iodine were stopped the symptoms recurred. He had not seen any benefit from *x*-ray treatment, and thought that subsequent operation was rendered more difficult from fibrosis around the lobe. With proper precautions the operative risk in thyroid surgery was only about the same as that in other major surgical operations. There should be preliminary rest and treatment with iodine, the dose of which varied with the toxicity. The anaesthetic should be nitrous oxide and oxygen. Only in exceptional cases should an attempt be made to remove all the necessary thyroid tissue at one operation. A single lobectomy, though it improved the patient, was never sufficient. Often the patient was satisfied, but she should be urged to have further operation. Removal of a single lobe was always followed by a slow relapse of symptoms, and this might result some years after removal of most of the thyroid tissue. A small amount of thyroid tissue should be left; this should be the posterior strip of the lobes, which distribution minimized the risk of traction and damage to the recurrent laryngeals. An exception to removing more than one lobe was where a hyperfunctioning adenoma was single or, if multiple, the nodules were confined to one side.

Mr. H. C. TRUMBLE (Victoria) dealt with the value of observations of the basal metabolism in the surgical management of goitre. He said that the basal metabolic rate for any organism was the minimum rate of change which could be induced by the exclusion of factors which normally tended to speed up the metabolism. These factors were digestion, exercise, excitement, and menstruation. At the time of estimation of the metabolic rate the state of the subject should approach that attained in peaceful sleep some twelve hours after the last meal. Normally the basal metabolic rate, when properly estimated (and several estimations on different days might be necessary to arrive at a reliable reading), should fall within certain limits. The thyroid gland apparently produced a substance which, when present in the blood, had the property of augmenting the metabolism. In disease of the thyroid gland the secretion might be deficient, or absent, or increased above the normal level. When there was no thyroid secretion the basal metabolic rate fell to about 40 per cent. below normal, and the organism existed at a very low level, both mental and physico-chemical activity being depressed to an extreme degree. A persistent increase in the amount of thyroid activity produced the well known syndrome generally entitled exophthalmic goitre and toxic adenoma of the thyroid gland. The basal metabolic rate might be increased to 100 per cent. above normal. In many cases the diagnosis was not in doubt, and estimations of the basal metabolic rate might be regarded as a luxury. There were many border-line cases where the diagnosis was not clear, and here the accurate measurement of the vital change might establish the diagnosis and direct treatment.

Gastric and Duodenal Surgery.

Mr. H. B. DEVINE (Victoria) gave a very interesting paper on the status of gastro-enterostomy in gastric surgery, illustrated by a cinema demonstration. He compared the views of English surgeons who favoured gastro-enterostomy with those of the Continental surgeons who favoured partial gastrectomy in the treatment of gastric and duodenal

ulceration. In his own opinion the results of routine gastro-enterostomy for gastric and duodenal ulcer were not satisfactory because the operation did not generally lead to the healing of the ulcer, gastro-jejunal ulcers were not a very unusual complication of the operation, and haemorrhage from an unhealed ulcer was fairly frequent. His criticism of the sanguine view of gastro-enterostomy results was that the surgeon often regarded a case as a perfect cure, whereas the patient felt that the operation had been a miserable failure because since his operation he had become afflicted with a train of very unpleasant nauseating but obscure symptoms almost worse than those of the original ulcer. These symptoms, regarded by the surgeon as neurasthenic or negligible, were very real, for when the "successful" gastro-enterostomy was undone the patient was delighted with the relief obtained. It was only fair to point out that the advocates of gastro-enterostomy contended that in such cases the patients had not been properly selected, and there had been an absence of the requisite knowledge of physiology and pathology, and the operative judgement, skill, and precision which were demanded in this operation almost more than in any other. In his view the curative action of gastro-enterostomy depended almost entirely on its effect on the mechanism of retention of the stomach—namely, on its emptying time. It depended also, but to a lesser extent, on the increase of alkaline regurgitation, but this to a large degree went *pari passu* with the emptying time, so that the fundamental physiological aim in gastro-enterostomy was to regulate this evacuation. The emptying time depended upon the "gradient" of the stomach and intestine, and possibly also upon the distance of the stomach from the pylorus. He distinguished two kinds of duodenal ulcer. The very chronic "acid-produced ulcer" occurred in sthenic persons, and was perhaps exclusively due to a very high acidity, the result of disordered gastric physiology. It was the same sort of ulcer as Mann had produced in his experimental dogs. The less chronic "debility ulcer," in which a lowering of resistance played the principal part, was comparable with the experimental ulcer that Rosenow had produced by infection. Mr. Devine thought that in gastric ulcer the acidity was of less importance; gastric stasis and depression of tissue resistance from local or general causes played the major part. In the application of gastro-enterostomy for the cure of ulcer there were two fundamental considerations: the abnormal physiological and pathological conditions which produced the ulcer, and the gross degenerative tissue changes brought about by prolonged secondary infection in the chronic ulcer. These fibrous changes and local devascularization would preclude the healing of an ulcer even in the absence of acid and even under the most favourable physiological conditions which an ideal gastro-enterostomy could give. Of unsuccessful gastro-enterostomies in his own clinic 14 per cent. were due to ulcer formation and 10 per cent. to gastric motility errors. The gastric motility patient was completely relieved of the symptoms of ulcer, but as a direct effect of the gastro-enterostomy he suffered from most distressing symptoms after meals, such as nausea, sinking sensation, vomiting, and, in addition, from diarrhoea with copious "explosive" motions and from great loss of weight and energy. Other errors of motility were attributable to excessive spur formation at the anastomosis, or to twisting in its long axis of a too long or too short afferent loop. Mr. Devine's investigations had led him to believe that an error in gastric or intestinal motility was the fundamental basis of even the "high acidity failures." With regard to his technique in gastro-enterostomy, the following points differed from the usual practice: collapsing the stomach with an air-pump to get in the undistorted stomach the proper point for the stoma; the stoma was curved to get some intestinal regurgitation; he did not use clamps, but prevented leakage by using the electric air-pump aspirator: a three-layer anastomosis with catgut was made. He recommended the following post-operative measures: an *x*-ray determination of the emptying time; a fractional meal to ascertain reduction of acidity; written instructions to the patient as regards diet.

Mr. ST. JOHN W. DANSEY (New South Wales), discussing the acute perforation of gastric and duodenal ulcers, said that there was probably no condition in surgery where successful treatment depended more on early diagnosis and prompt operation than acute perforation of gastric and duodenal ulcers. In figures taken from the records of the Royal Prince Alfred Hospital for the last ten years, perforation of gastric ulcers occurred in 39 males and 12 females, and of duodenal ulcers in 91 males and 7 females. Perforation of an acute ulcer of the stomach and duodenum hardly ever occurred. The investigation of all gastric ulcers operated on at this hospital during the last ten years showed that the anterior situation was more common in the male in the proportion of four to one. The average age for perforation of a gastric ulcer was 41 years, and for the duodenal between 40 and 49. Acute perforation of malignant ulceration occurred only once in this series of 149 ruptured gastric and duodenal ulcers. After the chronic ulcer had reached the peritoneum, the exciting cause of the rupture might be physical exertion or the powerful contractions of the stomach associated with hunger pain. The treatment of ruptured gastric and duodenal ulcers was essentially surgical. Under medical treatment the mortality was said to be 95 per cent. The abdomen was opened through the linea alba above the umbilicus. The perforation was closed by three mattress sutures of chromic gut. A posterior gastro-enterostomy was performed, except where the condition of the patient was very bad. Clamps were not used. Among fifteen cases of perforation of gastric ulcer treated by closure of the perforation and gastro-enterostomy there was only one death, and no death occurred among forty-one cases of duodenal ulcer.

Genito-urinary Surgery.

The surgery of the epithelial bladder tumours was the subject of a joint paper by Mr. GORDON CRAIG and Mr. R. K. LEE BROWN (Sydney). Tumours of the bladder had been recognized as early as 1551, but no treatment had been thought possible until Sir Henry Thompson, in 1880, removed successfully a growth through a medial perineal cystotomy. French surgeons introduced the thermo-cautery, and later the operating cystoscope was developed. High-frequency currents were first used by Edwin Beer of New York in 1910. The value of radium and *x* rays in this connexion was still uncertain. All epithelial bladder growths were to be considered malignant. Men were more liable than women in the proportion of four to one; infants were never attacked. A few cases in children had been recorded, but the incidence began definitely after the age of 20; it increased in each decade up to the sixties, from which time it declined. In Broders's classification of malignant growths of the bladder into four groups the malignancy was assessed on the proportion of the differentiated cells resembling bladder epithelium to the undifferentiated irregular cells with prominent nucleoli. In most cases of the lesser degrees of malignancy painless terminal haematuria was the first sign of the disease; it was due to portions of the growth being caught in the vesical sphincter at the end of micturition. Large growths were crushed by the bladder contraction and so the urine was never free from blood. With a greater degree of malignancy the tumour might be fairly advanced before blood appeared in the urine. In the less malignant cases surgery held out good hope of cure, though repeated examinations were necessary during the subsequent five years. Small papillomatous growths could be dealt with by diathermy through the cystoscope, except when situated around the vesical neck in men. The more malignant sessile growths gave very poor response to surgical treatment, and diathermy was preferable.

Mr. S. H. HARRIS (New South Wales) gave a cinematograph demonstration of prostatectomy.

SECTION OF OBSTETRICS AND GYNAECOLOGY.

At the first session the President of the Section, Dr. J. W. DUNBAR HOOPER (Victoria), delivered an address on the present position of obstetrics and gynaecology. He was followed by Dr. C. F. MORKANE (New Zealand), who contributed some observations on Rubin's transuterine insufflation. The second session was devoted to a discussion of the problems of Caesarean section. This occupied both

morning and afternoon, and included a paper by Dr. H. JELLETT (New Zealand) on the abuse of Caesarean section. Professor J. C. WINDEYER (New South Wales) read a paper entitled "The trial labour," and Dr. A. BONAR LINDSAY (New Zealand) discussed pubiotomy. On the following day a cinematograph demonstration of uterine prolapse was given by Dr. NORMAN MCARTHUR (Victoria), and Dr. CONSTANCE ELLIS (Victoria) described work in connexion with venereal diseases. On the last day a paper on pelvic lymphangitis was read by Dr. H. H. SCHLINK (New South Wales); in the afternoon a discussion on puerperal sepsis was held, and Dr. MARY DE GARIS (Victoria) read a paper on uterine inertia.

SECTION OF PATHOLOGY AND BACTERIOLOGY.

Dr. C. H. KELLAWAY (Victoria) read a paper on ascending renal infection. He said that the general trend of modern opinion was to regard nearly all renal infection as blood-borne, and in a number of cases the evidence did not admit of any other interpretation. If the bladder innervation was deranged, or if there was mechanical obstruction to the outflow, ascending infection might occur either by lymphatics or along the lumen of the ureter. He described the work of many who had attempted to prove ascending infection, but all this work was inadequately controlled in regard to the possibility of blood infection. His experiments had been performed on guinea-pigs, rabbits, and cats in which partial obstruction of the urethra or disorganization of the nervous mechanism of micturition had been produced. In guinea-pigs micro-organisms were introduced into the bladder, while in other experiments suspensions of "oil-blue" were used. In some of the experiments on rabbits and cats carmine and lamp-black suspensions were used, but later lycopodium suspensions were found to be the most efficient. He described his experiments in detail, and said that it was clear that in cats and rabbits the conditions upon which ascent along the lumen depended were very different from those which obtained in the guinea-pig, in which ascent readily occurred if the nervous mechanism was disorganized. The ascent of organisms was regularly demonstrable in their experiments. With regard to the lymphatics, his experiments with carmine were strongly opposed to the view that ascent in guinea-pigs could be explained in this way, since the particles were invariably found in the lumen of the ureter and pelvis and never in the wall of the ureter and its accompanying lymphatics.

Professor J. B. CLELAND (South Australia) contributed some considerations of the anaemias, leukaemias, leucosarcoma, and other allied conditions. He was unable to throw any further light on the etiology of pernicious anaemia. A high colour index with megalocytosis was diagnostic, the latter being the more important. Carcinoma of the stomach gave rise to an anaemia closely resembling pernicious anaemia. In 1923 a patient in Adelaide Hospital showed a typical blood picture of pernicious anaemia, and at necropsy a large gastric carcinoma was found. For many reasons this case was regarded as one of pernicious anaemia with independent gastric carcinoma. The association of achlorhydria with pernicious anaemia was well recognized, but in very few cases was free hydrochloric acid found. The haemolytic anaemia of pregnancy was rare, and although it resembled pernicious anaemia closely it appeared to be quite distinct. Several patients had been treated in Adelaide for aplastic anaemia. He had found blood transfusion to be the most beneficial treatment. These anaemias were probably all of toxic origin. There were three views which might be taken as to the nature of leukaemia, taking lymphatic leukaemia as an example. The disease might be: (1) a hyperplasia of lymphoid tissue with eventually an overthrow of cells into the circulation, the result of a dyscrasia; (2) a hyperplasia of lymphoid tissue with overflow due to the stimulant action of some toxin or the establishment of a virus; (3) the leukaemias had been likened to malignant neoplasms, and it had been suggested that they actually did represent such arising in lymphatic tissues or from certain constituents of the bone marrow and spleen. There was, however, a kind of malignant condition—lymphosarcoma—the behaviour of which was quite unlike that of lymphatic leukaemia. He illustrated his remarks with case histories, and said, in conclusion, that he thought the leukaemia picture was only incidental to the disease, and not the essential characteristic.

Poliomyelitis.

Dr. C. M. HECTOR (New Zealand) read a paper on poliomyelitis, with special reference to the outbreak in New Zealand in 1924-25, experimental work at Otago Medical School, and the essential nature of the disease. He said that before the first epidemic in New Zealand in 1914 there had been scattered cases of poliomyelitis, but the second epidemic of 1916 was practically confined to the Wellington district of the North Island, the proportion of non-paralytic to paralytic cases being twelve to one. The 1924-25 epidemic was more extensive, affecting the warmer parts of the country more than the cooler; an account of it had appeared in the *Medical Journal of Australia*. In conjunction with the New Zealand Branch of the British Medical Association the Health Department had published a memorandum on diagnosis, and this, together with preventive measures, resulted in a low paralysis rate, though the case mortality was high. The virulence of the infection was found to increase when restrictive proceedings were imperfect. The percentage of non-paralytic cases increased towards the end of the epidemic, in consequence probably of the better recognition of pre-paralytic cases and the earlier administration of serum. Dr. Hector summarized the replies to the questionary issued by the Health Department in 1925. The average recovery rate of notified cases was found to be 84 per cent. Infection occurred chiefly from personal contact with patients or carriers; there was no evidence of insects being concerned or other intermediate agents. About 89 per cent. of the patients were under 16, and the average estimate of abortive cases was eight to one. No relation to social circumstances or population density was found. Human convalescent serum had proved to be a specific in promoting rapid recovery and in preventing paralysis if given in the pre-paralytic stage. Dr. Hector then described the experimental work in Dunedin, and said that attempts to inoculate monkeys and rabbits with the virus had failed, owing probably to its low virulence. Discussing the nature of poliomyelitis and its relation to allied diseases, he said that it appeared to be distinct from encephalitis lethargica, though the boundary lines were ill defined. He referred to Topley's work on the conditions governing the development of immunity in a limited herd, and to Dudley's discovery of the importance of crowding in relation to infection. Subminimal infective doses might accumulate until they exceeded the minimal infective dose; when they collected faster than the defensive mechanism could resist, disease ensued. With less velocity of infection immunity might be produced without there having been any obvious illness.

Dr. JEAN MCNAMARA (Victoria) and Dr. F. G. MORGAN (Victoria) described the collection of blood from human donors, the preparation of antipoliomyelitic serum, and the results of its employment in treatment.

Resistance to Tuberculosis.

Professor J. B. CLELAND (South Australia) described the tuberculous lesions found in 800 Australian necropsies. During recent years it had been the custom to record at the conclusion of every necropsy whether tuberculous lesions were present, together with full particulars of such lesions. In 800 records the results were: Number of tuberculous foci detected, 527 (66 per cent.); slight lesions present, possibly tuberculous, 43; tuberculous lesions present, 230 (28.7 per cent.); healed calcified tuberculous lesions, 103 (13 per cent.); small quiescent or healing lesions, 11; extensive pulmonary tuberculosis, 51; extensive tuberculosis elsewhere than in the lungs, 7; tuberculous meningitis, 6; miliary tuberculosis, 4; pulmonary lesions, slight or semi-quiescent, death due to other causes, 48. He concluded that tuberculous lesions were less frequent in Australia than in Europe. Nearly half the tuberculous lesions found were small and quite healed. Healed calcified tuberculous lesions of glands in the abdomen or thorax did not necessarily protect against fatal pulmonary

tuberculosis. There was in the community a natural tendency for the patient's tissues to surround and overcome the tubercle bacilli. There was a close resemblance between the nature of lesions due to tubercle bacilli and those due to toxic, non-immunity-producing, colloid silica particles. Tubercle bacilli, coal pigment, and silica particles must always be carried in fluid or in an ingesting cell. Rapid proliferation of firm connective tissue could close all avenues of escape to tubercle bacilli. If these processes could be accelerated the figures of "healed calcified lesions" would increase. Calcification occurred more readily in necrosed tuberculous foci than in necrosed silicolic ones. Extensive tuberculous lesions of the lungs did not prevent the successful inoculation by ingestion of the intestines. There was no evidence that the control of the tuberculous process had been due to an immunity response rather than to a fibrosis unrelated to immunity. Susceptibility to tuberculosis was probably due to the possession of a connective tissue which responded too slowly and too feebly to the presence of tubercle bacilli, so that these were carried further afield before fibrosis could wall them in.

Various Papers on Pathology.

Dr. C. H. KELLAWAY (Victoria) discussed the specific localization of streptococci. His experiments had related to the alteration in the cultural characteristics and specific localizing tendency of streptococci caused by repeated animal passage. He described fully his methods and results, and said that organisms which tended to localize in one tissue might have superadded a tendency to localize in another tissue, while their original localizing tendency remained unaffected.

Professor CLELAND read a paper contributed by Mr. L. B. BULL, D.V.Sc., on the value of comparative pathology in the problems of human disease. Advances in animal pathology had in the past, and would in the future, interact on and profoundly influence human pathology. Investigations of filterable viruses had included those associated with disease in lower animals. One virus which had been closely studied was that causing pleuropneumonia in cattle; Heslop had shown that there were at least two types of this virus present in Victoria. Systematic research into the toxaemias of pregnancy in sheep was very necessary, since it might throw much light on the causation of human disease. Inflation of the udder with air had proved very successful in treating "milk fever," which might possibly be associated with hypoglycaemia. Lambs were subject to dysentery of unknown origin, but recent work seemed to point to *B. welchii* as a possible causative factor. He referred to osteo-arthritis in lambs and dealt in some detail with botulism. Every accurate observation of a pathological process in an animal was of value in the study of human disease. This was illustrated by the report of a case of a form of conjunctival granuloma in horses which had been fully investigated; a case in a human subject had been subsequently detected.

Dr. E. F. D'ATH contributed a comparative study of the Kahn and Wassermann tests in 6,000 cases. As regards untreated patients there had been total agreement of the results of the two tests in 5,369 cases and disagreement in 60 cases—an absolute agreement of 98.9 per cent. With patients under treatment there had been absolute agreement in 541 cases, relative agreement in 20, and disagreement in 70—an absolute agreement of 85.7 per cent., and a relative agreement of 88.9 per cent. The main advantages of the Kahn test were its simplicity and economy. The disadvantage was that the results were occasionally hard to read and still more difficult to interpret. From his results it would appear to give more false reactions than the complement fixation test. In the results obtained in cases under treatment the Kahn reaction became negative first in 41 cases and the Wassermann in 29 cases. He concluded by saying that the Kahn test was a reliable control to the complement fixation test. The latter was the more valuable, but to obtain the best results both tests should be used.

Dr. W. M. MOPPETT (New South Wales) described experiments with an *x*-ray spectrometer and the chorio-allantoic membrane of the chick embryo at eight to nine days' incubation. He had exposed areas of the allantois to small beams of *x* rays of known wave-lengths, scattering being reduced to a minimum. Further incubation for four days was necessary to develop the changes. Such conditions as atrophy, hypertrophy, epithelial invasion, leucocytosis, myxomatous changes, and the formation of fibrous tissue were observed. From his experiments he concluded that certain wave-lengths had the potential properties of affecting living tissues, these properties being antagonized by the presence of other wave-lengths. He added that the wave-length and homogeneity of a primary beam of *x* rays were very important factors.

SECTION OF PREVENTIVE MEDICINE AND TROPICAL HYGIENE.

This Section held three discussions on the school and administrative sides of the work of the public health nurse, epidemiology, and industrial hygiene. It took part in six combined meetings, and, in addition, various papers on special subjects were read.

The Public Health Nurse.

Dr. HARVEY SUTTON (New South Wales) dealt with the school aspects of this subject and said that the school nurse was a home or health visitor, whose duty was to "follow up" children found defective by the school medical examination, thus establishing a personal link with the home. She also visited the school before the doctor, testing the children's vision, and referring any child for medical examination. She also made a "clean survey" for pediculosis and impetigo, visiting and reporting on many homes. Children notified were later inspected again. This home visiting was independent of the doctor, and directly related to the head office. Occasionally she was called on to perform special duties, such as Schick-testing and vaccinating. To provide a closer control for infectious diseases and school epidemics more nurses were needed, and the pre-school children should be included under their care; Dr. Harvey Sutton showed how better control of infection would thus result. He outlined a scheme of training for the public health nurse; pre-graduate teaching to include experience in home visiting, district nursing, and in an infectious disease hospital, while the post-graduate instruction should consist of specialized work, such as infant and school health. He advocated the drawing up of a definite course for health nurses in Australia and New Zealand.

Dr. M. H. WATT (New Zealand) considered the matter from the point of view of administration. Public health, in the past limited to external sanitation, had now become personal in its application, attention being focused on the individual rather than on his environment. Under the new régime a new link, the public health nurse, was required, as the connecting link between the public health administrator and the home. The most important function of the public health nurse was to ensure the health and well-being of the mother during pregnancy, and of the child during infancy and the pre-school and school ages. Such duties were best performed by a woman who had had hospital and midwifery training, followed by a post-graduate course in preventive medicine. For organization he advocated the generalized system of public health nursing, combining preventive and curative nursing in restricted, and especially in rural, areas. Dr. Watt gave details of the public health nursing service of New Zealand at the present time.

Infectious Diseases.

Dr. MARY CHAMPTALOUGH (New Zealand) described her investigation with Dr. Baker McLaglan of the incidence of tuberculosis among school children. A group of 1,268 average children, between the ages of 5 and 15 years, in the Wellington and Canterbury districts, had been tested by the Moro percutaneous tuberculin method. Those giving positive reactions (14.1 per cent.) formed a selected group for further investigation by radiologists and chest specialists. Necropsies during the past ten years on children of this age period also indicated 14.1 per cent. of tuberculous lesions in children dying from other causes. Including those whose deaths were due to tuberculosis, 28.2 per cent. showed lesions. The age incidence varied

with the locality, Canterbury giving a higher incidence in earlier years. Exposure to infection was found to have greater influence than family history. The test did not show that a proportion of children of subnormal nutrition had latent tuberculosis. Of the total group investigated, 9.15 per cent. had active disease, while 2.36 (or 16 per cent. of positive cases) had latent tuberculosis, which might under adverse conditions become an active lesion. These children were being kept under observation, and had been placed on suitable treatment.

Surgeon Commander S. F. DUDLEY, R.N., dealing with the possibility of forecasting outbreaks of diphtheria, said that the Schick test made it easy to determine whether any individual could contract clinical diphtheria when exposed to ordinary doses of the specific organisms. Thus immune and susceptible persons were distinguished—Schick negatives and positives respectively. Similarly a group of people could be considered immune or susceptible according as the percentage of immunes in the group was above or below a certain figure. The spread of parasitic infection depended, not only on the actual density of the susceptible hosts in an area, but also on the ratio which existed between them and the immune hosts in the same area. The Schick-positive percentage also gave the relative number of immunes to each susceptible. When the percentage of immunes was above a certain value, which would vary with every environment and every complex of host and parasite, the resistance of the herd to the spread of symptomatic infection became so high that epidemics were unable to start or continue, even when many susceptible hosts and infecting parasites remained in the environment. This degree of herd immunity, in the case of diphtheria, could be ascertained for certain population groups. Once ascertained Schick-testing would show when an epidemic was to be feared, when a diphtheria epidemic in progress might be expected to cease, and how many individuals in the community must be rendered immune to raise the resistance of the herd to a safe point.

Fatigue in Industry.

Dr. J. S. PURDY (Sydney) considered the question of fatigue in industry. He said that to attain maximum efficiency in industry it was necessary to prevent excessive fatigue beyond the point recoverable by a reasonable period of rest. He had noted the effect of two days' rest weekly, in contrast with one, or with one and a half days' holiday. By means of figures and graphs from Sydney statistics, he showed that where the forty-four hours week obtained, a small reduction in accident incidence followed, and a marked reduction in absence from work through sickness. Overtime, with its resultant over-fatigue, led to increased absence from work, due especially to neurasthenia; two days' rest weekly had resulted in less absence attributable to this cause.

SECTION OF NEUROLOGY AND PSYCHIATRY.

Four discussions were arranged by this Section, the subjects being: the physical basis of mental disorder, the social aspect of mental disorder, the university teaching of psychiatry, and the voluntary patient. At the end of the commencement of the first session, Dr. O. LATHAM (New South Wales) delivered his presidential address on the place of pathology in mental disorder. After some preliminary remarks on the history of the development of pathology in mental hospitals, Dr. Latham referred especially to the work of the late Sir Frederick Mott, the late Professor Kulchitsky, and the late Dr. R. G. Rows. Froude Flashman, after visiting the laboratories of France, Germany, and England, had established the first neurological laboratory in the southern hemisphere. The President then referred in some detail to the need of pathological research in the mental hospitals and the scope of the work; he outlined a course of pathology suitable for candidates who were proceeding to the diploma in psychiatry. He then dealt with the duties and uses of the central laboratory of the mental hospitals. There was a great field for research in the changes that resulted in the nervous system from various forms of poisoning, and the work of Hunter and Royle had greatly stimulated interest in the sympathetic system. Some of the histological work of these two investigators had been carried on in Dr. Latham's laboratory. More attention ought to be given to the basal ganglia, both in connexion with encephalitis lethargica and its sequels, and also to disseminated sclerosis. Dr. Latham concluded that the duties of the pathologist were to aid the psychiatrist in his problems and to help the psychologist to realize how much mental function depended on neuronic activity by providing as many clearly defined pathological specimens as possible, together with histories accurately recording the mental states associated therewith, at the same time respecting the conception of a mental trauma.

The Physical Causes of Mental Disorders.

Dr. G. P. N. PRIOR and Dr. A. L. KINNA (Sydney), in a joint communication, referred to the effects on the mind of physical illness, neoplasms in the cranium, and drugs such as alcohol and opium. They quoted their own experience in the relation of septic foci to mental disorder. By eradicating the foci of infection and administering autogenous vaccines they had obtained good results. They also gave details of cases treated successfully by endocrine therapy, in which the mental disorder seemed to depend on endocrine dysfunction.

Dr. J. BOSTOCK (New South Wales) discussed the "composite" viewpoint in relation to the causation of mental disorder, with particular reference to sepsis and endocrine derangement. He referred to the work of H. H. Cotton and quoted some of his own cases which seemed to support Cotton's view, but an experiment on twenty-five cases of dementia praecox with Plombière douching produced negative results, and his own experience in the main could not support Cotton's results. His attention had then been turned to endocrinology, 40 per cent. of cases in one series showing thyroid deficiency, and he had been led to the hypothesis that thyroid secretion was necessary for the proper functioning of the vagal nucleus, and that possibly this combination also included the thalamus (as the seat of the emotions), giving a thalamo-thyro-vagal balance. Such a conception would account for the fact that in an individual psychosis there might be at the same time changes in the emotions, thyroid gland, digestive system, and circulatory system, together with an obscure reaction to thyroid administration owing to the variety of factors involved, while sepsis might also exist owing to change in digestive system, and accompanied by the presence of indicanuria and intestinal stasis.

Dr. H. M. NORTH (New South Wales) confined his remarks to the "focal sepsis" side of the subject. He reviewed the work of H. H. Cotton, and said that his claims were extravagant and could not be supported by the facts. A carefully controlled experiment by Kopaloff and Kirby failed to show any relation between focal sepsis and the functional psychoses. Dr. North was more in favour of the existence of a specific toxin from a specific organism causing a specific lesion, as in the case of encephalitis lethargica. From his own experience he concluded that patients had received too much surgical attention.

Dr. S. J. MINOGUE (New South Wales) referred to the fact that, though many of the patients suffering from functional psychoses showed evidences of endocrine disturbance, the results of endocrine therapy were very disappointing. The search for the basic factor must be extended further than endocrine disorders. He said that Cotton's dogmatic assertion that focal sepsis was at the bottom of all mental disease could not be established by the evidence adduced in support of it. The riddle of psychosis was still unsolved and the treatment remained empirical and symptomatic.

The Voluntary Boarder System in Mental Hospitals.

Dr. E. JONES (Victoria) quoted from a report of the British Royal Commission on Lunacy and Mental Disorders (1926), and outlined the differences between the British

and Australasian procedure, giving figures to show to what extent the system was in use in Great Britain, Victoria, New South Wales, and New Zealand. He considered that rather more than 50 per cent. of the voluntary boarders could have been certified. It rarely happened that marked cases of mental disorder were admitted as voluntary boarders. The whole movement tended in the direction of facilitating the early treatment of mental disorders and would pave the way towards general hospital treatment.

Dr. RALPH NOBLE (New South Wales) emphasized the advantage which accrued from the operation of the voluntary system in the way of earlier treatment of patients, and discussed the effect of hospitalization of the mental patients. Mental hospitals ought to be run on similar lines to general hospitals. He classified nervous and mental patients into (1) those anxious to receive treatment, (2) those who were indifferent, (3) those who had no insight into their illness. Patients in the first two groups would go to hospital if they were made comfortable in congenial surroundings. Well organized psychiatric clinics would do more than any other procedure to supply treatment of mental illness in its earliest stages and could be a powerful factor in breaking down public prejudice against mental hospitals. Such clinics would also be extremely valuable in the teaching of psychiatry to medical students, and also in the training of social workers. He had found in the Sydney psychiatric clinics that the majority of the patients who presented themselves voluntarily fell into the group labelled "neurasthenia," while there were also many cases of hysteria. There was always a proportion of mental defectives and epileptics; lethargic encephalitis and syphilis accounted for many of the cases of organic lesion leading to mental disorder. Thus these clinics tended to break down the barrier which had so long existed between diseases of the mind and of the body, and gave to psychiatry and neurology their proper place in the field of preventive medicine.

Dr. ST. LEGER GRIBBEN (New Zealand) briefly considered the system from the point of view of the patient, of his friends and the general public, and of the medical practitioner. Regarding the patient, the system was eminently successful because the patient came under treatment much earlier than he otherwise would do, with correspondingly better chances of favourable recovery. The whole outlook in mental hospital administration to-day favoured an extension of the voluntary system. From the point of view of the patient's friends and the public generally, he was convinced that the voluntary system had done much to break down the old prejudices against mental hospitals, which prejudices had only too often resulted in individuals being kept at home so long that their chances of substantial improvement became remote. The system benefited the general practitioner because it furnished a basis on which he could co-operate with the mental hospital authorities in the early treatment, without formality, of those cases which would be most likely to benefit from institutional treatment.

The University Teaching of Psychiatry.

Dr. D. W. CARMALT-JONES (New Zealand) opposed proposals to teach systematic psychiatry to medical students. In his view such teaching was premature and destructive of sound professional training, if given to those who were not well grounded in organic disease. Owing to the difficult nature of psychology it was impossible to give adequate training in the subject during the existing course. No more than a smattering was possible, and a smattering of psychology was that little knowledge which was a dangerous thing; it had frequently led to serious harm being done to patients and contained the risk of an objectionable pruriency. Psychiatry was a post-graduate study for mature minds.

SECTION OF PEDIATRICS.

This Section took part in three combined meetings, and papers were read principally dealing with therapeutics. One afternoon was devoted to a visit to the Karitane-Harris Infants Hospital. Dr. A. JEFFERIS TURNER (Queensland) delivered his presidential address on infant feeding, and another address was given by Sir F. TRUBY KING.

Dr. JEFFERIS TURNER said that the prevention of disease depended on research and the practical application of the results of research. A fairly constant percentage of infants either died early, or survived only as bodily or mental defectives. Ante-natal supervision and treatment should prevent much infant wreckage. Breast-feeding was the most important preventive of infant mortality during the first year, and the infant clinic should be utilized to this end. By the medical inspection of schools and the provision of necessary treatment the State could do much. The establishment of clinics for children under school age was another valuable activity. The methods of the clinic were educative, and for their success three conditions must be observed. Nurses should be thoroughly trained; they should have the necessary medical supervision and assistance, and should co-operate with the medical profession. There should be a medical director of the whole service and medical lecturers at the training school. There should also be a local medical man attached to each clinic, whose duties should be confined to one afternoon a week. The mortality of childhood after the second year depended mainly on infections such as diphtheria, scarlet fever, measles, whooping-cough, tuberculosis, bronchitis, and pneumonia. At this age many defects were due to removable causes such as adenoids.

Dr. E. H. M. STEPHEN (New South Wales), in a paper on blood transfusion in young children, said that in the wards of the Royal Alexandra Hospital for Children at Sydney intraperitoneal transfusions of citrated blood had been given to eleven children for gastro-enteritis. Four had recovered; all were suffering from severe infections. Three marasmic infants who had survived gastro-enteritis had made a rapid recovery in a few days after intraperitoneal transfusion; in two a very toxic condition was present. Very good results had been obtained after intravenous transfusion in these children. Eight children with chorea or acute rheumatism had been favourably influenced. Children with acute rheumatism and persistent anaemia had also been transfused. Enucleation of tonsils had been performed; the patients recovered rapidly. Two choreic patients had been transfused, and an infant of 5 months with idiopathic purpura had been twice transfused and had recovered. Transfusions of the forlorn hope type in a child with a protracted meningococcal meningitis and in a pyaemic infant aged 6 months did not prolong life. A reappearance of blood cells in the urine of an anaemic convalescent nephritic was of short duration.

SECTION OF ORTHOPAEDICS.

This Section took part in three combined meetings for the discussion of cripples in war and industry, spastic paralysis, and cancer. Two sessions were devoted to papers on various subjects, which included muscle tone, the subject of a presidential address by Dr. N. D. ROYLE (New South Wales). Dr. J. RENFREW WHITE (New Zealand) read a paper on visceroptosis, and Dr. OWEN JOHNSTON (New Zealand) dealt with subacute and chronic epiphysitis. The pathology of osteo-arthritis was discussed by Dr. M. RADCLIFFE-TAYLOR (New Zealand) and Dr. K. S. MACKY (New Zealand) described the various disabilities caused by abnormality of the fifth lumbar transverse process.

SECTION OF RADIOLOGY.

The bulk of the time of this Section was devoted to combined meetings, for it took part in no fewer than six. An address on modern *x*-ray technique was delivered by Mr. E. Jerman, director of the Education Department of the Victor *X*-Ray Corporation, Chicago.

Dr. S. S. ARGYLE (Victoria) gave a presidential address on the progress of radiology. He said that he had been practising radiology for the last twenty-two years, and recounted some of his experiences during that time. He

drew attention to the progress that had been made, and discussed some of the problems that had been overcome. He indicated the direction in which further developments might be expected. During the war he had been particularly concerned with the equipment of an *x*-ray plant for use under service conditions for the air, and had been actively engaged in the Eastern theatre.

Dr. W. R. STOWE (New Zealand) presented three subjects for discussion. He first described two cases of Kümmel's disease (post-traumatic spondylopathy); one showed complete collapse of the first lumbar body on the left side, and in the other there was collapse of the anterior parts of the third, fourth, and fifth cervical vertebrae. In each case there was a previous history of accident corresponding with the original statement of Kümmel, and kyphosis was present. Up to 1921 only eighty-four cases of this disease had been reported. He then discussed a case of diabetes insipidus associated with defects in the skull, and said that only three cases (in children) had been recorded in the literature. The skiagram showed multiple deficiencies of a punched-out circular character in nearly all parts, more particularly in the anterior half of the skull, including the facial bones. The indication was that the skull should be examined radiographically in all cases of diabetes insipidus in children. He also described the *x*-ray treatment of Bockhart's impetigo in the adult scalp. A woman, aged 40, had had the infection for eight years. A powerful tungsten arc yielding ultra-violet rays was used; the treatment was given every other day without success. Epilation of the entire scalp was effected by irradiation, followed by the use of the ultra-violet arc and electrolysis. The hair was growing vigorously, and there were no further signs of the disease.

Dr. H. A. McCOY (South Australia) read a paper illustrated by a number of slides of 5,000 cases of gastric and duodenal ulcer, all unpublished as yet. He believed that the clinical history should be taken by the radiologist, and considered that duodenal ulcer could not be diagnosed by the history alone, but only in conjunction with a positive *x*-ray finding, though this was contrary to the teaching of Moynihan. Dr. McCoy did not agree with Moynihan's statement that a gastric ulcer was very rarely within an inch and a half from the pylorus; he had seen many gastric ulcers in which the crater was in the immediate sphincteric region. In many cases of gastric ulcer high up on the lesser curvature he had found the rhythm symptoms of duodenal ulcer, and he had seen a number of cases of duodenal diverticulum, occurring usually in the second, third, and fourth parts. He emphasized the importance of careful screening in the diagnosis of duodenal lesions, and paid particular attention to the technique of examination, which was similar to that used by Carmen Scott, Vilvandré, and Barclay.

Dr. H. F. PRAAGST (Victoria) discussed two common types of reflex dyspepsia—namely, those due to disease of the appendix and of the gall bladder. He believed that the appendix could be seen in 90 per cent. of all types of patients using the opaque meal. Of his series of 70 cases diagnosed radiologically as disease of the appendix, in 17 per cent. this organ was not seen, but all proved to be pathological at operation. Tenderness was the most valuable single sign; stasis was not by itself diagnostic. He emphasized the importance of the opaque meal investigation being employed only after the whole alimentary tract had been examined so as to obviate errors due to reflex effects on stomach and duodenum. He drew attention to the value of cholecystography by the oral method in determining whether the gall bladder was the cause of a dyspepsia, and showed films to illustrate this technique.

Dr. D. F. MYERS (New Zealand) described a method of examining the colon, utilizing the opaque enema. He gave a detailed account of the preparation and administration of a barium enema and emphasized the importance of screening in the investigation of the colon and the necessity of placing the patient in various positions in order to make a satisfactory diagnosis. He showed a number of very fine photographs reproduced in miniature from films illustrating a wide range of pathological conditions.

(To be continued.)

Reviews.

LISTER IN GLASGOW.

LISTER was born on April 5th, 1827, at Upton in Essex, of English lineage. He first became professor in Glasgow in 1860. The centenary of his birth is to be celebrated next week in London, where his work as a professor ended. It is being celebrated in Glasgow at the end of this week, April 1st, and it is therefore very appropriate that there should have been published in Glasgow two books—the one, *Reminiscences of Lister and of his Work in the Wards of the Glasgow Royal Infirmary, 1860-1869*,[1] by Sir HECTOR CAMERON; and the other, *Lister and the Lister Ward of the Royal Infirmary of Glasgow*,[2] compiled for the occasion by Mr. Ernest Maylard, honorary consulting surgeon to the Victoria Infirmary, Glasgow, Mr. James A. Morris, architect, and Mr. L. W. G. Malcolm, M.Sc., conservator of the Wellcome Historical Medical Museum in London, where a collection of relics of Lister is now on view.

In his preface to the *Reminiscences of Lister*, by Sir Hector Clare Cameron, Sir Donald MacAlister truly says that "the number of those who 'from the beginning were eye-witnesses and ministers' of his beneficent revolution in surgery becomes sadly smaller." Happy are we that so gifted and distinguished a member of the group of disciples who sat at the master's feet in the early days at Glasgow is still with us and able to make a contribution so acceptable as he does in this publication. No other living surgeon knows as much of the successive stages and steps in the evolution of the antiseptic system, from the first successful essay on a compound fracture to the full fruition of the method which banished hospital gangrene and pyaemia from those deadly ground-floor wards of the Royal Infirmary in Glasgow.

Sir Hector reminds us of the conditions of Lister's appointments in Glasgow. Like other Regius Professorships, his chair of Systematic Surgery was conferred upon him by the Crown, and he held it quite independently of the authorities of the Royal Infirmary. But if he wanted to practise what he preached and to afford clinical object-lessons to his students he must make himself so far agreeable to the directors as to induce them to appoint him to the staff of their hospital for five years. The directors were probably more anxious to help in the application of such knowledge of surgery as then existed than to increase and widen that knowledge. Sir Hector tells us a story of Lister's canvass of the directors which bears on this point. A very shrewd and influential tradesman decried the suggestion that the wards might be made use of to test the validity of theories enunciated in the lecture room as "a real Edinburgh idea." In his opinion the Infirmary should be used to cure the sick and not to educate the student. He did not realize that the surgical wards killed many more than were cured, until the "Edinburgh idea" was acted upon by the young Englishman. Although the hospital buildings were then (in 1861) new, they proved to be fearfully insanitary, to a degree remarkable even in those days of unwholesome wards. Sir Hector Cameron tells us that as a student he himself has seen as many as five men die in the same ward in one week of pyaemia following amputation for injury. Surgery in these circumstances was a cause of more grief than satisfaction to a conscientious and sensitive man such as Joseph Lister, and the effect upon him was obvious to a sympathetic observer. The successive steps in the evolution of antiseptic surgery were all watched by the eager student who is now Emeritus Professor of Clinical Surgery at Glasgow, from the crude carbolic acid, the tin-foil cap, the carbolic putty and carbolic oil, to the buried silk, and finally to the absorbable catgut ligature. The further advance to porous dressings was not made until Lister had returned to Edinburgh as professor of surgery. We are perhaps inclined to think of him as a philosophic thinker, which he

[1] *Reminiscences of Lister and of his Work in the Wards of the Glasgow Royal Infirmary, 1860-1869.* By Sir Hector Clare Cameron, C.B.E., LL.D., M.D., C.M., F.R.F.P.S. Glasgow University Publications, VI. Glasgow: Jackson, Wylie and Co. 1927. (6 × 9, pp. 45; 3 plates. 1s. net.)

[2] *Lister and the Lister Ward of the Royal Infirmary of Glasgow.* A Centenary Contribution. Glasgow: Jackson, Wylie and Co. 1927. (6¼ × 10½, pp. xvi + 132; 27 plates. 12s. 6d. net.)

was, but not as a man of prompt action in emergency, which he also was. Sir Hector Cameron relates two incidents in which he stands out strongly as a man of deeds, in circumstances in which words were out of place, as when he rescued his own coachman from the danger of kicking horses and when he helped to save a delirious patient who had jumped out of a window.

After eight years at Glasgow, when Lister left for Edinburgh "he was able with confidence to ensure that a wound under his care pursued from first to last an aseptic course." None of those surgeons of the Glasgow Infirmary who had advised the directors that there was nothing in the antiseptic method dared give such an assurance.

Sir Hector Cameron reminds us, too, that, thanks to this immunity from suppuration, Lister was able to be a successful pioneer in bone and joint surgery and to correct the deformities due to vicious union of fracture. He left bone chips in a wound, confident that nature would deal with them satisfactorily, although, perhaps, he did not foresee that in the hands of a successor, Sir William Macewen, they would also serve a useful purpose.

In summing up his recollections and reflections Sir Hector concludes that the qualities of outstanding merit which distinguished Lister were his extraordinary powers of patience and perseverance. These, added to his great abilities and industry, carried him to the very summit of achievement accessible to the healer and the practical philanthropist.

The other book relates the efforts that were made some three years ago to save the Lister Ward from destruction and the determination of the directors of the Infirmary to persevere in its demolition. We commented on this matter at the time (BRITISH MEDICAL JOURNAL, October 27th, 1923, p. 776, and February 16th, 1924, p. 288), and after the lapse of more than three years we still wonder at the managers' decision.

Besides dealing with the controversy, in which all the valid arguments seem to be on one side, this book gives an interesting history of the three successive hospital buildings which have been used by the Royal Infirmary of Glasgow on or near the same site during the last 140 years or so.

Mr. Ernest A. Maylard, consulting surgeon to the Victoria Infirmary, Glasgow, who was formerly a manager of the Royal Infirmary, contributes a short but interesting sketch of Lister's career in Glasgow, as well as an account of the "Efforts for the preservation of the Lister Ward," and to Mr. James Morris, F.R.I.B.A., whose public-spirited efforts to secure the preservation of the ward have been beyond praise, we owe the article on the Infirmary buildings, with many interesting illustrations, as well as comments on the demolition controversy.

When the first building was erected the directors had the great advantage of using the designs of the brothers Robert and James Adam, and a handsome and dignified building was the result, to judge by the excellent illustrations which adorn this book. With the growth of Glasgow this building, even when a wing had been added, was inadequate. A new and larger hospital was erected on another part of the ground, and thus there seems to have been no excuse for the destruction of the handsome original building. Possibly those responsible for the mean-looking new building shunned comparisons with the old one, or were simply inspired by the materialistic spirit which moved the destroyers of the western towers of the adjacent cathedral. It was on the ground floor of this new building that Lister's male ward was situated, in which he applied his new method with such striking results. It was in it that he showed surgeons how to abolish hospital diseases, despite the fact that only a few feet distant was a mass of festering corpses which had been hurriedly buried there during a cholera epidemic in 1849. Separated from the other end of this ward block by only a few feet, and aligned at right angles to it, was the "Fever House," in which were treated many of the cases of fever for which Glasgow had formerly a bad name. It would have been hard to find a more severe test of the antiseptic method than was afforded by a ward thus placed.

By the beginning of the present century it became evident that a new surgical block was necessary, and it was decided to pull down the building which was opened in 1861, including the Lister Ward. Appeals for its preservation, although couched in the most respectful and persuasive terms, were all rejected, sometimes on one ground and sometimes on another; the reasons given were not all reconcilable, and none of them were convincing. Then, three years ago, as if to put the matter beyond further controversy, the ward was pulled down as far as the ground level, and in that condition the site remains to-day, unused and unsightly. Luckily the trustees of the Wellcome Historical Medical Museum acquired the materials and furniture of the ward, and the reconstruction of part of it in Wigmore Street is described by the conservator, Mr. L. W. G. Malcolm, M.Sc., in this volume.

The celebration of the Lister Centenary takes place in Glasgow on the first of this month, and we intend to publish an account of the proceedings in our next issue. Members of the medical and other learned professions, as well as many other citizens of that great city, are taking this occasion to show their pride in the fact that it was in Glasgow Lister found opportunity to prove his worth and confer on the whole world his great gift. Lister's tenure of office was by no means easy. It is significant, as Mr. Morris remarks, that so even-tempered and patient a man as he was should have felt compelled to put on record that his work at the time was "often heartbreaking, so as to make me sometimes feel it a questionable privilege to be connected with the institution." When he had succeeded in banishing hospital diseases from his ward, the directors pooh-poohed his system, attributed his success to sanitation, and resented his statement of facts. Their successors seem to have had no appreciation of the inspiration that the preservation of the ward would have been to surgeons, and of the educational value that would have attached to its maintenance in its original state.

SCIENCE AND QUAKERISM.

A COLLECTION of brilliant essays entitled *Common Sense and its Cultivation*,[3] the outcome of a life largely spent in India in an official position—Government analyst at Agra—was brought out last year by E. HANBURY HANKIN. The author is well known for his early work on immunity, of which a reminder occurs in his use of the adjective "alexic" for protective theories made up on the spur of the moment as a defence mechanism in opposition to an unwelcome proposition. Among other topics he deals with the mental ability of members of the Society of Friends, who as a result of their religious tenets were in the past driven to concentrate on business careers, education, and the study of nature. Although a small religious community such as the Quakers, numbering less than twenty thousand in Great Britain in 1900, would not appear likely to form an important recruiting ground for the Royal Society of London, he shows that this indeed is the case. In the period 1851-1900 there were on an average probably 17,000 Quakers in Great Britain, and among them there were nineteen Fellows of the Royal Society, as against 817 non-Quaker Fellows, but per million of the population this works out at the surprising figure of 1,117 for Quakers and twenty-four for others. Taking these figures at their face value Dr. Hankin argues that during the period a man had about forty-six times more chance of election to the Royal Society if he was a Quaker or of Quaker descent than if he belonged to the general population, and that, purely on the consideration of these figures and the rapid rate of increase of Quaker Fellows and the decrease of non-Quaker elections, the Royal Society should become a branch of the Society of Friends. Figures, it is said, will prove anything, and Dr. Hankin, after putting forward this fantasy, fully admits that the small numbers dealt with do not justify such a conclusion. Among the Quaker members of the medical profession, to which their social and intellectual atmosphere specially fitted them, Thomas Young was the most outstanding example of an all-round

[3] *Common Sense and its Cultivation*. By Hanbury Hankin, M.A., Sc.D. With a foreword by C. S. Myers, M.D., Sc.D., F.R.S. London: Kegan Paul, Trench, Trubner and Co., Ltd.; New York: E. P. Dutton and Co. 1926. (Cr. 8vo, pp. viii + 289. 7s. 6d. net.)

genius and the most distinguished man of science who ever became a physician; Lord Lister's is the most immortal name in the practice of surgery, and it is a hundred years ago since he was born to make surgery safe. Others such as Thomas (Baron) Dimsdale, John Fothergill and Lettsom, Thomas Hodgkin, philanthropist and pathologist, and Jonathan Hutchinson have left their impress on the history of medicine.

Miss ISABEL GRUBB has collected a large amount of material for her *Quakers in Ireland, 1654-1900*,[4] which carries on the story told in Dr. Rutty's *History of the Rise and Progress of the People called Quakers in Ireland*, published in 1751, since which date no such connected account appears to have been put before the public. Most of the early Quakers in Ireland went over from England as settlers between 1650 and 1680, and though at first persecuted did much to advance educational and economic progress. A Cork Quaker, William Martin, in 1838 recognized the great possibilities latent in a young Roman Catholic priest, and so at his suggestion Father Theobald Mathew undertook his famous temperance crusade throughout Ireland.

LIGHT TREATMENT.

IN 1907 Dr. L. JAUBERT established at Hyères on the Riviera a heliotherapeutic clinic, which he claims to have been the first in France. Since then he has been actively engaged in studying the effects of natural heliotherapy on the prevention and treatment of disease. He has now summarized his experience in a book.[5]

It seems to us of great importance at this time, when treatment by light rays of various kinds has acquired a sudden and to some extent unjustifiable popularity, that those who have had most experience in this field of work should put forward their views so as to guide and restrain the younger and more enthusiastic advocates of the method.

It is so easy to forget that ultra-violet light is a powerful protoplasmic poison, and like other protoplasmic poisons, such as mercury and arsenic, must be employed with the greatest caution. All the more is this necessary when it is remembered that, unlike the chemical poisons, the dosage of ultra-violet light cannot be measured with accuracy. And even though care is taken to avoid actual burns or other gross effects, we have far too little knowledge at present to state that its action is uniformly beneficial. The Northern races have attained an equilibrium in which the actinic rays of the sun play only a small part, and it is on *a priori* grounds very doubtful whether their resisting power to infection is likely to be materially increased by the almost unlimited exposure that is now being advocated both in medical and lay journals. This is not said to discourage or to depreciate in any way the value of light treatment; it is only to draw attention to our ignorance of the action of light rays on the biological processes of the organism.

One point made by Dr. Jaubert is of profound importance. It is that natural heliotherapy and treatment by artificially generated ultra-violet rays are radically different. To call the latter method "artificial heliotherapy" is a misnomer. The most valuable factor in natural heliotherapy is the free exposure to open air; the direct effect of insolation on the tissues is, he considers, insignificant. On the other hand, phototherapy, dispensing with the action of fresh air currents, relies exclusively on the direct action of the light rays. Though admitting the value of the latter method of treatment in certain conditions, the author has no doubt that it is very much more restricted in its application than is natural heliotherapy.

We would recommend this book to all who are interested—and who is not?—in the sun cure, trusting that it will, by demonstrating how empirical is our present knowledge of light treatment, stimulate many to a more profound and scientific examination of the part played by the actinic rays in the physiology and evolution of living protoplasm.

[4] *Quakers in Ireland (1654-1900)*. By Isabel Grubb, M.A. London: The Swarthmore Press, Ltd. 1927. (Cr. 8vo, pp. 158. 3s. 6d. net.)

[5] *La Cure de Soleil*. Par Dr. L. Jaubert (d'Hyères). Préface du Professor Leriche. Bibliothèque des Connaissances médicales. Paris: E. Flammarion. 1927. (Demy 12mo, pp. 233; 38 figures, 6 plates. 12 fr.)

A second edition of the English version of Dr. ROLLIER'S *Heliotherapy*[6] has now appeared. His work at Leysin and his book giving an account of his work, published for the first time in English in 1923, are so well known that a brief notice and a warm welcome to this second edition are sufficient. A full account of the method of graded exposure to the sun's rays is given, together with details of the special apparatus used in the different deformities. A feature of the new, as of the former, edition is the large number of excellent illustrations demonstrating, not only the cure of the local lesion, but also the remarkable "transfiguration" of the whole body effected by the treatment. Radiographs of bone lesions before and after treatment are also numerous and equally striking. The clinical conditions dealt with are mainly tuberculous disease of bones, joints, and glands; non-tuberculous conditions are dealt with in a separate chapter. There are also short sections on climate, altitude, and the general action of sun rays on the body.

The first edition of a book entitled *Ultra-violet Radiation and Actinotherapy*,[7] by Drs. ELEANOR and W. KERR RUSSELL, was reviewed on April 17th, 1926 (p. 704). We have now received the second edition, which is nearly twice the size of the first, and contains additional information, after a further year of experience, on the value of the various types of lamps now in use. The writers describe themselves as "two medical practitioners," but they may justly claim a special competence in this sphere of practice, and in the ability to make plain a procedure that is more easily seen than appreciated from the printed word.

They have generally found the various types of lamps satisfactory, particularly the air-cooled mercury vapour lamp; the difficulty of the lamp is, not any inability to get sufficient radiation, but in gauging the correct amount required by the patient. The tungsten arc gives off more radiation and is cheaper to install, but upkeep, owing to the high price of tungsten electrodes, is great; also it produces unpleasant fumes, and needs constant hand regulation. The carbon arc is very suitable for hospitals where many patients are treated together. Briefly, the faults of the three are: The mercury vapour lamp, fragile and has a comparatively short life; the tungsten arc, fumes, and the running costs are high; the carbon arc, costly in current. In the new edition there is an interesting chapter on the history of light therapy, and an extended record of types of cases that are benefited by the treatment.

The book may be commended to the attention of practitioners who contemplate making use of this mode of treatment, and they will find in it a clear account of the scientific basis of the treatment and the details of its application.

The appearance of *The Artificial Light Treatment of Children*,[8] by Dr. KATHERINE M. L. GAMGEE, affords evidence of the great popularity of this method of treatment at the present time. Dr. Gamgee relates her experience and results at the Hull Corporation Artificial Light Clinic, especially in conditions of rickets, anaemia, and malnutrition in young children. An account is given of the administrative details of such a clinic and of the various kinds of suitable light apparatus; of the technique of exposure, and of the record of clinical data, along with illustrative notes from a number of case records. The author is convinced of the great value of this treatment, although it is a little difficult for a critical reader to accept all her conclusions from the data given. It would seem almost too good to be true that the use of violet rays in such clinics would do anything more than palliate the evils produced

[6] *Heliotherapy*. By A. Rollier, M.D. Translated by G. de Swietochowski, M.D., M.R.C.S. Second edition. Oxford Medical Publications. London: Milford, Oxford University Press. 1927. (Demy 8vo, pp. 318; 273 figures. 20s. net.)

[7] *Ultra-violet Radiation and Actinotherapy*. By Eleanor H. Russell, M.D., B.S., and W. Kerr Russell, M.D., B.S. With forewords by Sir Oliver Lodge, F.R.S., D.Sc., LL.D., and Sydney Walton, C.B.E., M.A., B.Litt. Second edition. Edinburgh: E. and S. Livingston. 1927. (Demy 8vo, pp. xxxi + 429; 168 figures. 15s. net.)

[8] *The Artificial Light Treatment of Children*. By Katherine M. L. Gamgee, M.R.C.S., L.R.C.P., D.P.H. With an introduction by Professor Leonard Hill, M.B., F.R.S. London: H. K. Lewis and Co., Ltd. 1927. (Demy 8vo, pp. xx + 172; 33 figures, 16 plates. 10s. 6d. net.)

by lack of sunlight and fresh air in the homes of our poor city populations. Natural sunshine together with fresh air is the ideal to be aimed at; and it would be regrettable if excessive enthusiasm about the value of this artificial substitute were to slacken our efforts in working for the radical remedy—which consists in good houses and the introduction of fresh air into the homes and lives of city dwellers.

Dr. E. MAYER'S *Clinical Application of Sunlight and Artificial Radiation*[9] is the kind of book on this subject which is to be welcomed, for the author has had considerable personal experience in the use of ultra-violet radiation in various clinical conditions of tuberculosis. With this foundation and with a long experience of all modern methods of treatment in tuberculosis acquired at Saranac Lake, New York, he has attempted a comprehensive survey, not only of the clinical applications of light treatment, both natural and artificial, in tuberculous conditions, but of the more fundamental and much more important problem of the biological action of light upon human tissues. Such a survey can only be given in a provisional way, but even now its need is being widely felt as a critical check on the extravagant claims that are being made, especially for artificial light therapy. The first part of the book is the more important; it deals with the nature of various forms of radiant energy and with their effects upon animals, plants, and bacteria, and is written with an extensive knowledge of the growing literature on this subject. The sections on the clinical applications of light treatment include, not only his own personal experience in tuberculosis, but also sufficient reference to the results of other workers in Europe and America. The whole book is a well balanced critical account of a large subject, the importance of which is being more and more realized, and for which accurate and scientific data are urgently required.

The book is well illustrated, and is also provided with an enormous bibliography. The latter fills nearly sixty pages, and as not even the majority of these references are quoted in the text it is of little value except that it indicates the enormous output of writing on the subject, much of it, we fear, of very doubtful value. But Dr. Mayer's book will certainly take a much more honourable place in the literature of the subject.

NOTES ON BOOKS.

DUVERGER of Strasbourg and VELTER of Paris have collaborated in writing a textbook of ophthalmic surgery (*Thérapeutique chirurgicale ophthalmologique*[10]) which, within our knowledge, is the best of its kind in French. The whole field is covered. A large amount of space is devoted to the question of anaesthesia; the authors strongly advocate regional applications. They give in minute detail the technique they practise, and express the view that with few exceptions it should supersede the employment of general anaesthetics. A special feature is made of plastic operations on the lids and conjunctiva, to which about a quarter of the book is assigned. The operation advised in those cases of lacrymal disease where nasal drainage is feasible is a modification of the technique of Dupuy-Dutemps and Bourguet. In the surgery of the cornea stress is laid upon the advantage of a conjunctival flap in chronic marginal ulcer, and superficial corneal grafts are suggested as worthy of a trial in some cases of central opacity. Cysts and tumours of the iris which are amenable to local removal are freely excised *in situ* with the surrounding iris tissue after a hemisection of the cornea has been made and the whole half of the cornea has been folded back *en bloc*, exposing the neoplasm "*à plat et au grand jour.*" For such a procedure retrobulbar anaesthesia is necessary. The old-fashioned ways of performing cataract extraction are advocated, and the various methods of intracapsular extraction are dismissed as not compensating for the increase of risk by any theoretical or cosmetic advantages. For acute glaucoma iridectomy, and for chronic glaucoma the technique of Lagrange, are given first consideration. In enucleation regional anaesthesia only is advised. The book is well written, and its most striking feature is its wealth of clearly drawn illustrations; they are much above the average, and, like the illustrations of all surgical textbooks, show how beautiful and easy surgical manipulations really are.

Dr. FRANKLIN H. MARTIN, Director-General of the American College of Surgeons, visited South America in 1920 and 1921, and published an account of his tours in a book entitled *South America from a Surgeon's Point of View*, which we reviewed on March 4th, 1922 (p. 355). Since then other Fellows of this College have paid similar visits, and Dr. Martin has, therefore, revised his original book extensively to include an account of the *Vandyck* cruise arranged by the College in 1922-23, and journeys of Drs. Francis P. Corrigan, W. J. Mayo, A. J. Ochsner, and E. I. Salisbury, with a view to indicating the position to-day of medical practice in the Latin-American countries. The present volume, entitled *South America*,[11] contains an interesting description of each of its constituent countries illustrated by many photographs, and an account of their medical institutions, including their relation to the American College of Surgeons. It is stated that up to the present time the Fellowship of the American College has been conferred upon 265 Latin-American surgeons, in addition to several honorary Fellowships awarded to certain of the more distinguished among them. Dr. Martin has compiled a considerable amount of information which will interest and assist travellers, historians, or medical practitioners who propose to visit South America. An English-Spanish and an English-Portuguese vocabulary increases the value of the book.

Dr. F. F. IMIANITOFF, assistant to the gynaecological research department of the Institute of Anatomy in Brussels, has prepared an English translation of Dr. SERGE VORONOFF'S book on the treatment of old age by grafting, which we reviewed on October 23rd, 1926 (p. 736). This translation[12] is illustrated by photographs, and is printed clearly. The book contains an account of the operative technique in man and monkeys, and a report of the results obtained.

The *Pocket Dictionary for Midwives and Maternity Nurses*,[13] edited by DORA VINE, contains a list of obstetrical and gynaecological terms, with phonetic pronunciations, and a short account of various medicaments used in midwifery. It is, as the title claims, very portable, and should be found useful by midwives, maternity nurses, and students for the C.M.B. examination.

In a small manual entitled *Leadership*[14] Dr. WILLIAM COLBY RUCKER suggests rules of conduct for the younger officers of the United States Public Health Service. He describes in general terms the elements of character and personal behaviour which are essential for professional success, and gives numerous hints as to the way in which the medical officer should deal with his colleagues and the public.

[9] *Clinical Application of Sunlight and Artificial Radiation.* By Edgar Mayer, M.D. London: Baillière, Tindall and Cox. 1926. (Med. 8vo, pp. xvi + 468; 16 figures, 37 plates. 45s. net.)

[10] *Thérapeutique chirurgicale ophthalmologique.* Par Prof. Duverger et Prof. Velter. Paris: Masson et Cie. 1926. (Roy. 8vo, p. 480; 45 figures, 40 plates. 18s. 4d.)

[11] *South America.* By Franklin H. Martin, C.M.G., D.S.M., M.D., LL.D., F.A.C.S. Introduction by William J. Mayo, M.D., D.Sc., LL.D., F.R.C.S.Eng., Edin., Ire., D.S.M. Revised edition. New York, Chicago, London, and Edinburgh: Fleming H. Revell Company. 1927. (4½ × 7½, pp. xxiv + 411; illustrated. 3 dollars.)

[12] *The Study of Old Age and My Method of Rejuvenation.* By Dr. Serge Voronoff. Translated by Fred. F. Imianitoff, D.S.C., B.A., M.R.C.S. London: The Gill Publishing Company, Ltd. 1926. (5½ × 8½, pp. 155; 36 figures.)

[13] *Pocket Dictionary for Midwives and Maternity Nurses.* Edited by Dora Vine. Nursecraft Series. London: H. Edgar Smithers. 1927. (Fcap. 16mo. 1s. 6d. net.)

[14] *Leadership.* By William Colby Rucker, M.S., M.D., Dr. P.H. New York: The Macmillan Company; London: Macmillan and Co., Ltd. 1928. (Fcap. 8vo, pp. iv + 171. 10s. net.)

PREPARATIONS AND APPLIANCES.

Forceps for Operations on the Semilunar Cartilage.

MR. F. WILSON STUART, M.D., Ch.M. (Birmingham), writes: The illustrations show a forceps which I have had made for holding the semilunar cartilage during its removal. The teeth are so fashioned that they crush and grip the cartilage tightly instead of cutting through and breaking it up—an action which allows of continual slipping. The instrument is designedly made long to allow of the hand holding it being well away from the wound. It has been thoroughly tested, and proved entirely satisfactory. The makers are Messrs. Philip Harris and Co., Ltd., Birmingham.

British Medical Journal.

SATURDAY, APRIL 2ND, 1927.

CERTIFICATION OF THE INSANE AND THE HUME-SPRY CASE.

THE certification as insane of a mentally disordered person has always rightly been regarded as an exceedingly grave matter, and, by the medical men directly concerned, as a painful duty. Deprivation of personal liberty, loss of civil capacity, and real handicap to re-employment after recovery, to mention some only of the disabilities certification entails, carry so much weight that relatives and doctor alike often go very far to avoid this step. But these considerations, however greatly they may delay certification, and (too often) treatment at expert hands during an early and most favourable period, do not expose the real difficulty or dilemma in which the medical practitioner may easily find himself.

As pointed out on behalf of the British Medical Association to the Royal Commission on Lunacy[1] by several high authorities, if the medical practitioner fails to certify a case with suicidal or homicidal tendencies and a tragedy ensues, he may be held responsible; or, if he takes charge of the case without certification, Section 315 of the Lunacy Act may be invoked and he be found guilty of a misdemeanour; while if he certifies the case he exposes himself to an action by the patient on recovery. The case Harnett *v.* Bond, heard a year or two ago, has done nothing to allay professional disquietude in this matter, but instead has so considerably increased the reluctance of medical men to handle so many-pointed an instrument as a lunacy certificate that in some districts, it has been said, medical men refuse to certify in any circumstances. In consequence, in these districts there is an increase of the practice of sending patients, not paupers, to Poor Law institutions for certification and transfer to mental hospitals, instead of, as is so much to be desired, to the mental hospitals direct. This is only one example out of several, but in general it may be said that this case has accentuated the need for that "accommodation of legal standards and medical considerations" which the Royal Commission described as the crux of the problem before it.

In such circumstances the result of the Hume-Spry case was awaited by all with anxious interest, and the congratulations which happily we were able to offer to Dr. Percy Smith and Dr. Watson last week must have been echoed by the medical profession as a whole, and also by that considerable body of laymen concerned with and about the care and treatment of the mentally afflicted. So much, however, has public attention been focused on the fifteen days' hearing concluded on March 22nd that the fact may have been overlooked that as far back as January, 1926, the defendants made application to a Master of the King's Bench Division, pursuant to the Lunacy Act, 1890, Section 330, Subsection (2), to stay the proceedings, and that the order of the Master staying the proceedings was affirmed by the Judge in Chambers. Mr. Hume-Spry then appealed to the Court of Appeal, which held, in the light of the affidavits of the plaintiff's expert medical witnesses, that a prima facie case that the defendants had acted without reasonable care had been shown, and consequently the action must proceed and the orders of the Master and the Judge be set aside. An explanation of the ruling of the Court of Appeal will be found in our issue of March 13th, 1926 (p. 508). Put shortly, the Court of Appeal held that the question for decision by the Master under Subsection (2) was not, Did the defendant medical men act in good faith and with reasonable care? but, Has the plaintiff disclosed a prima facie case of negligence? It appears, therefore, that although this subsection may powerfully protect medical men against frivolous litigation, cases in which the plaintiff is able to bring sufficient evidence in support of his claim to disclose a prima facie case of negligence, even when there appears to be a good defence, must go forward to trial under Subsection (1). Where, as in this case, the evidence includes sworn statements by medical men of professional eminence supporting the plaintiff's contention of lack of good faith or reasonable care, it would seem that a prima facie case can hardly be denied.

It may be recalled that the Royal Commission recommended certain amendments of both subsections of Section 330 which would place the onus of proof of bad faith and lack of reasonable care upon the plaintiff, and also would permit the action to be stayed unless the judge and court were satisfied that there was substantial ground for alleging bad faith or want of reasonable care. These recommendations, though they fell far short of the proposals of the British Medical Association, would, if adopted, certainly increase the measure of protection afforded at present. Whether the alterations of Subsection (2) recommended by the Royal Commission would have allowed the action to be stayed at its interlocutory stage may be questionable; but having regard to the serious statements made against several who had the misfortune to be involved, it is now clear that it was far better that this action should have been tried by a jury, and that the same verdict which fully cleared both defendants of the charges of bad faith and negligence brought against them completely vindicated the honour of those aspersed.

It will have been observed by those who have followed the case that at every stage of the action great stress was laid by some of Mr. Hume-Spry's expert witnesses on the necessity of making a full physical examination, without which, they said, the defendants should not have arrived at their conclusion. This contention is untenable. We should be the last to minimize the importance of making the fullest possible physical examination, but—and this cannot be said with too great emphasis—the only criteria for the purposes of certification as insane are psychological, and concern the mind and conduct of the person examined. Moreover, evidence for the defence showed that Mr. Hume-Spry had been under treatment in Ministry of Pensions hospitals for some years, where he had been carefully examined physically; and that not only had both defendants been informed of this fact, and that he showed no signs of any organic disease, but that the actual medical case-sheets were produced to Dr. Percy Smith at the time of his examination of the plaintiff.

Had the case gone otherwise it might have been necessary to examine at some length the suggestion that the defendants acted in bad faith because they did not make inquiries of independent persons in a search for evidence corroborative of the plaintiff's delusions. Fortunately it is still not required of the

[1] Report of the Royal Commission on Lunacy and Mental Disorder. Printed and published by H.M. Stationery Office. 1926. Price 3s. 6d.

certifying medical man that—to quote the apt phrase of defending counsel—he constitute himself into a kind of amateur divorce court.

The principal charge made by the plaintiff against the Ministry of Pensions was that a plot or conspiracy existed to separate him from his wife by detaining him in hospitals, and that his eventual certification was the culmination of such conspiracy, and was engineered by headquarters officials of the Ministry of Pensions in conjunction with the plaintiff's wife to cover her alleged misconduct with the medical superintendent of a Ministry hospital in 1920. The evidence showed that these allegations were baseless, and the product of a mind dominated by an inordinate degree of morbid suspicion and jealousy. There was, on the other hand, ample proof that the Ministry of Pensions, in accord with its publicly avowed policy, kept the plaintiff under observation and treatment in its hospitals for some years in the hope of avoiding certification, and that it was only when he was considered to have become potentially dangerous and showed marked deficiency of self-control that legalized detention became essential.

At the judge's direction the documents connected with the case were retained in the custody of the court in order that the Director of Public Prosecutions might consider whether or not he should take criminal proceedings against Mr. Hume-Spry for perjury or such other offence as he might think should be disclosed. If it be true, as was stated during the hearing, that this action was subsidized by a society—the Ex-Services Welfare Society—whose claims, supported by distinguished patronage, are constantly before the charitable public from whom it derives its funds, we can only deplore the fact.

It is always a comforting reflection that out of evil good may come, and if, following the great publicity given to the case and the complete vindication of the defendants, there ensues a greater degree of confidence in the good faith of medical action, and a less suspicious attitude of the public towards its servants acting in the discharge of their often difficult duties, this trial, however considerable the pain to the defendants, may yet prove a blessing in disguise.

PARALYSIS OF THE VOCAL CORD AND OF THE DIAPHRAGM.

APART from their value as experiments in nerve anastomosis, the investigations reported by Sir Charles Ballance and Mr. Lionel Colledge in the current and preceding numbers of the JOURNAL are of physiological interest in that they deal with one aspect of what has been termed "central nervous response to peripheral nervous distortion."[1] The object of their experiments has been to see if a paralysed vocal cord can be so innervated by a motor nerve which normally innervates muscles other than those of the cord that the latter regains its normal co-ordinated activity, moving rhythmically in respiration and playing its part in phonation. Their observations have been carried out on dogs and monkeys, and the essential results were described concisely by Mr. Colledge in this JOURNAL two years ago (March 21st, 1925, p. 547). Certain additional facts concerning the restoration of function in the diaphragm after section, partial or complete, of the phrenic nerve and the anastomosis of its distal end with the descendens hypoglossi are embodied in the present papers, together with a wealth of experimental detail. Also there is the brief account of a human case in which they have applied the method of nerve anastomosis that their animal experiments have shown to be most efficacious. Briefly, the facts of observation are these: Anastomosis of the distal end of the cut recurrent laryngeal nerve with either the vagus trunk or with the descendens hypoglossi restores a tension of apparently normal degree to the paralysed cord, but fails to produce the normal respiratory movement of the cord. Under partial asphyxia the cord does show some adduction and abduction movement, indicating that motor nerve fibres have traversed the suture and gained the musculature—a conclusion confirmed by stimulation experiments—but a useful normally co-ordinated movement of the cord is not restored. Following anastomosis of the distal end of the cut recurrent laryngeal nerve with the proximal end of the cut phrenic nerve, or an end-to-side anastomosis of the former nerve with the partially divided phrenic, there appear after the lapse of some months movements on respiration of normal amplitude and form in the previously paralysed cord. However, these tend with the further passage of time to increase in amplitude so as to exceed those of the normal cord of the opposite side. Further, when a similar nerve division and anastomosis is performed on the opposite side in the same animal, paradoxical movements tend to develop in the newly innervated vocal cords. So that the normal abduction of inspiration and the adduction of expiration are reversed, and stridor develops. In the case of the unilateral operation a similar disorder of movement is apt to appear under anaesthesia.

It would seem from the observations thus summarily stated that while a restoration of muscular contraction in the intrinsic muscles of the larynx can be secured with reasonable certainty by phrenic-recurrent laryngeal anastomosis, the restoration of co-ordinated movement in the cords is a result much more difficult of attainment. As the authors point out, a similarly deficient functional result is apt to follow attempts to re-innervate the paralysed facial muscles by nerve anastomosis, and it is possible that, as with the face so with the vocal cords, re-education exercises may overcome this defect up to a certain point. It is probable, however, that the various movement complexes, voluntary and reflex, in which the vocal cords normally take part are even more highly differentiated than those in which the facial muscles engage, and that in consequence a perfect physiological result from recurrent laryngeal anastomosis will be even more difficult to obtain. After describing the movements of the glottis in simple respiration, Gowers remarks in his textbook: "If the action be thus complex in simple opening and closing the glottis, how much more complex must it be in the delicate and varied actions by which is produced the infinite variety of vocal sounds." And we have also to consider the harmonious co-operation in which the glottis normally works with the other muscles of respiration.

In the endeavour to find an explanation for certain of their observations, the authors wander more deeply into the realms of speculation than the physiologist will be prepared to follow, while they record observations—not, indeed, essential to their main purpose, but made in the course of a prolonged investigation—which he will not be able to accept. Thus it is stated that anastomosis of the distal end of the cut facial nerve with the proximal end of the cut lingual will secure effective re-innervation of the facial muscles, and that a similar sensory-motor anastomosis of the distal end of the phrenic with a cervical cutaneous

[1] Osborne and Kilvington, *Brain*, 33, 1911.

nerve will restore movement to the paralysed half of the diaphragm. These appear to have been isolated observations which, in view of their unusual character, it might have been wiser not to embody in their paper. Further, there is the statement that stimulation of the hypoglossal nerve evokes reciprocal innervation of the hyoid muscles, contraction of the supra- and relaxation of the infra-hyoid. It is clear that the acceptance of this as an accurate observation would involve a revolution in the body of accepted neuro-physiology.

These aspects of their paper do not, however, invalidate its main thesis, and in the discovery of an operation which may with reasonable certainty relieve the subject of a double abductor paralysis from the danger to life in which he stands, the authors have every ground for satisfaction. It seems that in unilateral phrenic (end-to-side) -recurrent laryngeal anastomosis they have devised such an operation. The reader who wishes to ascertain the essential facts of observation upon this, the authors' main purpose in their investigation, may with advantage refer to the earlier paper published by one of them in this JOURNAL and cited above.

THE NEW MIDDLESEX HOSPITAL.

WHEN the authorities decided that the Middlesex Hospital would have to be rebuilt, the appeal to the public for support in this important undertaking mentioned the sum of half a million pounds. This amount, however, represented only the estimated cost of replacing the existing, condemned portion of the hospital, and, as distinct from the "rebuilding scheme," the "development scheme," announced at a meeting of subscribers in November last, including the provision of a new out-patient department, the erection of paying wards, adequate accommodation for the nurses, and certain developments in connexion with the medical school, is dependent entirely upon the special generosity of friends of the hospital. The Ferens Institute of Otology was opened the other day (as recorded in our issue of February 12th, p. 296), and building work in connexion with the Courtauld Institute of Biochemistry is proceeding. Subscriptions towards the sum necessary for the erection of paying wards have already reached the total of £10,000, and more is promised. At the annual court of governors, held on March 24th, Prince Arthur of Connaught was able to announce that yet another important item in the development scheme could now be proceeded with, since an anonymous donor had made the splendid gift of £160,000 for the provision of a complete and up-to-date hostel and training school for nurses. At present the nurses at Middlesex Hospital live in five separate buildings, but thanks to this most generous gift it will be possible to erect a building on a site adjoining the hospital in which the whole nursing staff could be housed under conditions where the necessary comfort and facilities for instruction, recreation, and social intercourse could be realized. This donation has relieved the governors of the hospital of much of their anxiety with regard to the development scheme, for the space in the new main hospital buildings can now be planned to contain all the necessary accommodation and equipment for treatment in one building. The modest donor, whose anonymity is most strictly preserved, was inspired to make his magnificent contribution by the good offices of Mr. A. E. Webb-Johnson, surgeon to the hospital. The nurses of this hospital have again to be congratulated on their good fortune, for it was only a short time ago that Dr. Essex Wynter made the generous offer of his country house and certain cottages, together with sufficient endowment, to provide a home for retired members of the nursing staff.

HARVEY MEMORIAL: REBUILDING HEMPSTEAD CHURCH TOWER.

WILLIAM HARVEY died at the age of 80 on June 3rd, 1657, and his remains were deposited in a vault adjoining the parish church of Hempstead in Essex, seven miles from Saffron Walden and some fifty from London. By the middle of the last century this family vault underneath the Harvey Chapel had become ruinous, and early in 1882 the church tower fell, and is still a heap of stones in the churchyard. On St. Luke's Day, 1883, the body was removed from its resting place and laid in a white marble sarcophagus erected by the Royal College of Physicians of London in the chapel above the vault. As recorded two years ago,[1] a project was set on foot to restore the fallen church tower as a further memorial to William Harvey at an estimated cost of £5,000. This appeal had the warm support of the Royal College of Physicians, and a committee was appointed, including the bishops of the three neighbouring dioceses, the President of the Royal Society, and the President and other distinguished Fellows of the Royal College of Physicians, with Lord Stanmore, treasurer of St. Bartholomew's Hospital, as its chairman. A meeting of the committee of the Hempstead Church Tower Restoration Fund was held recently at the Royal College of Physicians, when the following report was received:

	£	s.	d.		£	s.	d.
Donations received ...	431	10	6	Expenses of appeal...	59	4	10
				Purchase of £360 5% War Stock ...	363	6	9
Interest on investments, etc.	32	2	8	Balance in hand and at bank	41	1	7
	£463	13	2		£463	13	2

There is, in addition, £515 5s. 7d. collected locally previous to this appeal and invested in 5 per cent. War Stock. It was resolved to keep the fund open in the hope of receiving sufficient further support to commence the rebuilding of the tower. Donations from members of the medical profession may be sent to Dr. Sidney Phillips, joint honorary secretary of the Fund, the Royal College of Physicians, Pall Mall East, S.W.1.

THE BEIT MEMORIAL FELLOWSHIPS.

THE administrators of the Beit Memorial Fellowships for Medical Research have resolved to increase their annual value. The change will take effect on October 1st, and will then apply to all fellowships—those now held and such as may be awarded next July. The annual value of a junior fellowship will then be raised from £350 to £400 a year, a fourth-year fellowship from £400 to £500, and a senior fellowship from £600 to £700. This step has been taken by the trustees after consultation with the Advisory Board of the Beit Fellowships and others competent to express an opinion. The necessary expenses of an undergraduate at Oxford or Cambridge cannot be directly compared with those of a Beit Fellow, for the terms cover barely half the year, whereas the science worker must have provision for nearly twelve months. The need for an increase is felt in particular with regard to the junior Fellows, who are practically dependent on the salary. If the Fellow's circumstances are too straitened he or she is discouraged from attempting, during what are very formative years of life, to correct the somewhat intense specialization the work of the fellowship entails by recourse to some broad cultural interest or pleasure. No one can doubt that this risk exists, for even physiology and pathology are breaking up into specialties, so that a neurological physiologist may know very little about biochemistry, and both will tend to limit their general interests in the cultural life about them. Incidentally we may recall that the Rhodes scholarships have recently been increased to £400 a year, and even

[1] See BRITISH MEDICAL JOURNAL, May 9th, 1925, p. 895.

junior Beit Fellowships are held by persons distinctly senior to the Rhodes scholars. An election of junior Beit Fellows will take place in July next, as more fully stated in a notice which will be found in our advertisement columns. The usual tenure of a junior fellowship is for three years, and those elected next July will be required to begin work on October 1st. Forms of application and all other information can be obtained from the honorary secretary, Sir James K. Fowler, at 35, Clarges Street, London, W.1. Applications must be received by him on or before June 1st.

CRÉSOPIRINE.

THE great importance of the coal tar antipyretics and analgesics, and the clinical success of drugs of such comparatively recent origin as acetyl salicylic acid and cinchophen (atophan), make new derivatives of this group of particular interest. Two theses for doctorates at Lille have just reached us dealing with a new derivative—namely, acetyl-ortho-cresotinic acid (1-2-6) ($CH_3.C_6H_3.COOH.OCOCH_3$), which was prepared in 1926 by Professors Carrière and Gérard and named by them crésopirine. The cresotinic acids were investigated by Stockman in 1912 and found to be antipyretic, and acetyl p-cresotinic acid (ervasin) was introduced at that date for the same purpose. In the thesis of Dr. Madeleine Notredame the mode of preparation of the substance is described and a certain number of experiments and clinical observations are reported. M. Serre in his thesis (1927) gives an account of a considerable series of clinical observations made with this drug. Both authors show that crésopirine has an antipyretic and analgesic effect on acute rheumatic fever equal or superior to that of sodium salicylate. Further, they claim that in chronic rheumatism crésopirine has an analgesic action superior to that of aspirin, and often produces benefit when the latter drug fails. They claim also that the toxicity of crésopirine is very low. The group of coal tar derivatives which possess antipyretic and analgesic action is large, and it is particularly difficult to estimate accurately the relative value of these drugs. The theses under discussion suggest, however, that crésopirine is well worth a trial, particularly in refractory cases of chronic rheumatism.

MILK IN HOLLAND AND DENMARK.

LAST year the Health Committee and the Port Sanitary and Hospitals Committee of the City of Liverpool instructed their chairmen, the medical officer of health, and the chief veterinary officer to visit Holland and Denmark for the purpose of studying Continental methods in the production and distribution of milk. The deputation was accompanied by twenty-four other persons, representative of the Liverpool Cowkeepers' Association, of farmers, and of distributing firms. The visit lasted from September 27th to October 3rd. In its report the deputation states that the standard of knowledge and interest in milk amongst producers, distributors, and the general public in the countries visited is high; that more milk per head is consumed than in this country; that the price is regulated according to quality; and that the feeding and management of cattle are more scientifically conducted. The handling and distribution of milk are conducted from large centres, where the hygienic arrangements are all that can be desired. It is admitted that the farms visited were specially selected, and that there are farms in England where the standard of efficiency is as high as in Holland and Denmark. But it is said that the average farmer in this country does not understand the scientific feeding of cows, and that the supervision of small milk dealers is very difficult. The construction of cowsheds in Holland and Denmark is very simple, cleanly, and satisfactory. In one farm in Denmark the cows are fed principally on concentrated food and sugar beet, and are rationed according to the milk yield. In a farm in Holland automatic drinking vessels are supplied, and it has been found that each cow in milk requires about four gallons of water for every gallon of milk produced. When at grass the animals in Denmark are tethered each day, so that they have to eat within their bounds, and the grass of the field is economically consumed. Great care is taken in milking to prevent pollution by excreta, and in some places the tails of the cows are tied by the tip to a wire running the length of the cowshed, so that when the animal lies down the tail, while it can still be used, is raised from the excreta. In several places in Holland electrically driven machines are used for milking. The cows are often groomed night and morning, and the hair on the quarters, udders, and tails clipped. The distributing firms are large, and have well trained staffs and well appointed machinery. The distributing dairy of the Danish Milk Company can deal with 40,000 gallons of milk a day and one ton of butter. In Denmark there are five grades of milk, while in Great Britain, according to the deputation's report, there are only two types—graded milk and "milk." At the Amsterdam University Professor van Leersum told the deputation that exposure of milk to air renders it less nutritious, in that at the end of sixteen hours vitamin C and vitamin A are practically non-existent. The members of the deputation are of opinion that in Great Britain clean milk production is difficult owing to faulty construction of cowsheds, lack of knowledge of modern methods in producers, and absence of distinctive prices for various standards of milk. Their slogan is "propaganda," through the press, by wireless methods, and by clean milk competitions.

OCCUPATION ANALYSIS.

THE National Institute of Industrial Psychology has issued recently a report[1] on occupation analysis, the outcome of team work by the staff of the vocational section of the institute. The introduction of the report is concerned with the definition of terms; and this is very necessary in a comparatively new psychological pursuit. We learn that "occupation analysis" includes every kind of inquiry that the vocational adviser's study of employment entails, and means the analysis of occupations in order to discover the human capacities which are essential to success. It is of use, we are told, in vocational guidance, vocational training, vocational selection, and in industrial psychology. Evidently the method aims at placing on a scientific basis the rough-and-ready methods of trial and experiment hitherto adopted by employers and their workpeople. General and special information about every occupation and each of its processes is collected, and the information recorded under various headings, including a general description of the process, the psychological and physical requirements in the worker, the method of entry into the occupation, and the prospects it offers. The systematic observation of occupation should, it is urged, be carried on by the help of psychological methods; consequently the information under the heading "psychological" is especially complete, and contains a record of the intelligence required, the special abilities that are useful, the degree of manual skill involved—for the estimation of which a system of symbols has been devised—the temperament most suited to the work, and the general or special experience which the worker should possess. The method of recording the information gathered is illustrated by a detailed account of the occupation of laundry work, from the receiving department, through the various processes of washing and

[1] London: Published at the offices of the Institute, 329, High Holborn, W.C.1. 2s.

ironing, to the final stage of packing and dispatching. The reader will learn that in the sorting department a temperament is needed which has "no marked dislike of handling soiled linen." The calenderer must be calm and equable, and able to resist monotony; the ironer should be cautious, while the more "refined" lady in the dispatching department should combine lightness of touch with a pleasant manner. While there is no doubt that the accumulation of these data may bring to light many interesting facts, we are glad to see at the end of the report a suggestion to the vocational adviser that he will more often be helpful to a child if he tells him the kind of process he ought to seek than if he advises definitely one particular occupation. Most of us have known school "duffers" who afterwards, on their own vocational selection, became eminent men. Until occupation analysis becomes an exact science it will be well to leave even the elementary school child of 14 as many loopholes as possible for private vocational selection.

THE NOMENCLATURE OF TEETH.

THE British Society for the Study of Orthodontics recently appointed a committee to consider the present systems of nomenclature in use and to submit proposals for their rectification. The committee's report was presented to a recent meeting of the society by Mr. Norman Bennett. It would sanction a large number of terms for general use, together with alternative terms in a few cases, and reject others which are equivalent but are unsatisfactory or confusing. The term "cervix," for example, as one of the divisions of a tooth is adopted, with "neck" as an alternative; but the terms "fang" and "prong" are rejected in favour of "root" and "apex." The committee found some difficulty in defining the orthodontic term "vault." The definition ultimately framed was "the longest palatal border obtainable through a coronal section of a maxilla," and the term "transpalatine arch" was rejected. A good deal of trouble also was taken over the definition of "occlusion." Ideal occlusion was defined as a hypothetical standard of occlusion based on the morphology of the teeth, and normal occlusion as that occlusion which was within the standard deviations. "Inclination," defined as "the rotation of a tooth around any transverse axis," was preferred to the Continental term "version." With regard to the nomenclature of appliances and treatment, a good deal of discussion took place over "anchorage," defined as the point of attachment at which the force of reaction produces little or no movement. It was desired, said Mr. Bennett, to avoid the fallacy of pretending that anchorage was a fixed point, which it never was. Mr. George Northcroft, also a member of the committee, who had had the opportunity of discussing nomenclature with American orthodontists at the recent conference in New York, said that he had found great difficulty in persuading the Americans that there was no such thing as reciprocal anchorage, and could not be. He had pointed out that if the United States ship *Minnesota* was anchored to the earth, the earth might stabilize the *Minnesota*, but the *Minnesota* would not stabilize the earth. The Americans, however, remained unconvinced, and in respect to appliances and treatment the British and American nomenclatures had to part company. One American orthodontist objected to the term "cheek teeth" (all teeth posterior to the canines), but Mr. Northcroft pointed out to him that it was a term used by the American anthropologist W. K. Gregory of New York, and had come into general use. The alternative term, "teeth of molar series," is, however, to be permitted, but not the term "back teeth." To his surprise the Americans accepted the term "premolar," although in former discussions they had insisted on the term "bicuspid," but with regard to occlusion they fell foul of the British terms "normal," "prenormal," and "postnormal," favouring instead "neutroclusion," "distoclusion," and "mesioclusion." They abandoned the terms "gression" and "trusion," however, in favour of "displacement," as meaning the malposition of the crown and root of an individual tooth to an equal degree and in the same direction. Some discussion took place on the term "orthodontics" itself, and it was mentioned that the original title of the society was a society for the study of "orthodonture," a term of transatlantic origin; the attention of Sir James Murray, of the *New English Dictionary*, was drawn to it, and he suggested "orthodontics," which was adopted, as it was felt that there could be no higher authority.

CANCER COMMISSION OF HARVARD UNIVERSITY.

THE fourteenth annual report of the Collis P. Huntington Memorial Hospital for Medical Research and of the Laboratories of the Cancer Commission of Harvard University covers the year ending June 30th, 1926. There was a slight fall in the number of new patients, due to the opening of other institutions with good facilities for treatment. Numerous investigations were carried on in the hospital and the laboratories during the year under review. A report issued on the course, duration, and termination of one hundred untreated cases of cancer of the breast provides a basis for the comparison of the efficiency of different methods of treatment. The advantages and disadvantages of the newer methods of electro-cauterization and coagulation have also been studied. The value of a liver diet in the treatment of pernicious anaemia was one outstanding line of research, and the relation of the number of leucocytes in the saliva to variations in their number in the circulating blood is believed to be of practical importance in determining the safety of *x*-ray treatment in critical cases of the disease. Another discovery made was that, though a certain race of mice was immune to transplanted tumours, this inherited immunity could be overcome in about 15 per cent. of cases by the addition of a small piece of sterilized flannel to the inoculated tissue at the time of implantation, thereby causing local irritation. An attempt is in progress to repeat and confirm the work of Gye and Barnard. In connexion with the free diagnosis service for the State of Massachusetts, nearly 2,000 tissue specimens of suspected carcinoma were examined during the year.

A HEALTH DEMONSTRATION.

THE League of Red Cross Societies and the Belgian Red Cross, working together, have provided the first object lesson on the health organization of an industrial town in Europe. In the United States a similar experiment had been previously carried out, but the circumstances in these two instances, as might be supposed, differ considerably. The objects aimed at were chiefly these: to complete and co-ordinate the medical and hygienic equipment of a locality, and to interest in this project all kinds of agencies concerned, including the local medical men, in an attempt to provide efficient and up-to-date treatment for all the inhabitants who might require it. The result has been that 40 per cent. of the inhabitants have availed themselves of the preventive hygienic services provided, and that the expenses have not exceeded three francs a head for each inhabitant annually. How this result was achieved, and much other interesting information, is to be found in a report[1] published in Paris by the League of Red Cross Societies, of which Dr. Claude Lillingston is an energetic

[1] Croix-Rouge de Belgique. La démonstration d'hygiène de Jumet. Ligue des Sociétés de la Croix-Rouge. Paris. 1927

officer. Jumet, which has been the scene of this first essay, is an industrial town of 30,000 inhabitants, situated some miles to the south of Brussels, not far from Charleroi. It has had a chequered past, for the neighbourhood has unfortunately been repeatedly the battle-ground of contending armies from the seventeenth century onwards, and no matter whether Austrian, French, Dutch, British, or Prussian gained the day, war always meant misery for the unfortunate inhabitants. At present it owes its prosperity to its coal mines and extensive glassworks. The foundation of the health organization of Jumet rests on the "centres de santé," which may be translated as welfare centres, with their corps of visiting nurses, familiar to us in this country as district nurses; but in its conception the centre de santé is an educative and preventive, and not a curative, institution. Jumet was selected by the Belgian Red Cross for the first experiment because its municipal authorities showed a lively interest in matters of public health. Despite this benevolent predisposition, only a very few families in Jumet could be said to avail themselves of the best and latest treatment, and the vast majority obtained only empirical and imperfect medical attention. All this is changed. Apparently the inhabitants of Jumet, like the patients of Dr. Knock, had to be told that they were ill before they would seek advice. After the establishment of clinics and hospital facilities, and the organization and mobilization of the local medical men, 6,000 (or 20 per cent. of the 30,000 inhabitants) have realized their duty and presented themselves. But these figures, large as they are, do not include the expectant mothers, the children between the ages of 3 and 6 years, or the school children, the addition of which would double the number of cases. The good results of the preventive and curative measures taken in 1925 cannot be appreciated fully for some time to come. The various means employed to bring about these results need not be described at length, but those who are interested in the application of the general principles of social hygiene to a particular foreign industrial town should refer to the very full and carefully compiled report, illustrated by views, charts, and diagrams, which has just been issued by the League of Red Cross Societies. The copy sent to us has been placed in the Library of the British Medical Association.

THE STATISTICIAN AD HOC.

It is, perhaps, debatable whether specialized institutions should keep their own statisticians. The popular suspicion of statistics is such that it behoves the statistician to try to emulate Caesar's wife. In this belief we are not fully convinced of the validity of the conclusions arrived at in a paper on tuberculosis hospitalization[1] by Mr. Godias J. Drolet, statistician to the New York Tuberculosis and Health Association, and consulting statistician to the Tuberculosis Sanatorium Conference of Metropolitan New York. Mr. Drolet finds a striking correlation between the tuberculosis death rate in various countries and the ratio of beds available. Thus, as he rather quaintly puts it, the "beds available for each ten deaths" in New Zealand, Canada, and the United States are 9, 7, and 7. And it is in these three countries that the tuberculosis mortality per 100,000 of population is lowest. In Japan, with only one tuberculosis bed available for each forty deaths, the mortality is very high, though not so high, we note, as in Czecho-Slovakia, where one bed is available for each ten deaths. It is true that Mr. Drolet guards himself by saying that of course he does not believe that hospitalization is the only factor controlling the tuberculosis death rate. Two other factors which he admits play a very great part are general living and working conditions, and racial resistance, which he believes has been acquired through previous tuberculization of the race or group, the effects being transmissible. Nevertheless, Mr. Drolet thinks that "we must acknowledge that tuberculosis hospitalization would seem to be one of the outstanding factors throughout the world in the control of the white plague." The arguments in the article are too sketchy to enable an opinion to be formed. Mr. Drolet would like a great many more beds for tuberculosis even in the United States, and a much longer term of treatment. But he complains that no answer has been given to the questions whether tuberculosis institutions should be for educational training or for curative treatment, and whether they should treat advanced cases or only early favourable cases. He urges more study of the ultimate results rather than of "the always debatable immediate results" of treatment.

[1] *American Review of Tuberculosis*, December, 1926.

THE DEFENCE OF RESEARCH.

CONFERENCE ON ANIMAL EXPERIMENTATION.

As already announced, the Science Committee of the British Medical Association, by the instructions of the Council, is convening a conference of representatives of medical and scientific bodies in opposition to the Dogs' Protection Bill. It will be held in the Council Room of the Association's House in Tavistock Square, London, on Monday, April 4th, at 4.30 p.m. The universities, medical schools, and other medical and scientific societies have been asked to send representatives, as have the veterinary and dental organizations. The response to these invitations has been highly satisfactory and the conference promises to be a most representative gathering. The lay press also has been invited to send reporters. The chair will be taken by the President of the Association, Mr. R. G. Hogarth, C.B.E., F.R.C.S.

The main purpose of the meeting is to discuss the following three motions:

1. That this Conference, believing that any withdrawal or curtailment of the powers at present granted under licence and inspection will hinder medical research to the detriment of the health and well-being of the community, wishes to enter a strong protest against any bill which has for its object further restrictions upon experimental work on dogs or other animals.

2. That this Conference is of opinion that the existing law should be altered so as to permit, under proper provision for the prevention of pain and for efficient inspection and control, the use, for purposes of research, of some of the numerous stray and unowned dogs now taken up by the police and condemned to the lethal chamber, thus ensuring conditions which are essential to progress and physiological knowledge and to the application of this knowledge to the practice of medicine.

3. That copies of the above resolutions be sent to the Prime Minister and to the Home Secretary, together with a note of the names of those present at the Conference and of the bodies they severally represent.

These resolutions will be moved and spoken to from the physician's point of view by Lord Dawson of Penn, G.C.V.O., M.D.; from that of the surgeon by Sir Holburt Waring, F.R.C.S.; from that of the psychiatrist by Professor George M. Robertson, M.D., President of the Royal College of Physicians of Edinburgh; from that of the investigator by Sir Thomas Lewis, M.D., F.R.S.; from that of the veterinarian by Lieut.-Colonel J. W. Brittlebank, President of the Royal College of Veterinary Surgeons; and from that of the general practitioner by Dr. H. B. Brackenbury, Chairman of the Representative Body of the British Medical Association.

In the meanwhile the Divisions of the Association have been asked to approach their local members of Parliament, explaining to them the attitude of the profession in relation to the Dogs' Protection Bill, and urging them to vote against the bill on second reading.

A petition against the bill has been circulated by the Science Committee among the medical members of university staffs, medical schools, and teaching hospitals, and is meeting with a most satisfactory response.

Canada.

[FROM OUR SPECIAL CORRESPONDENT.]

THE HOSPITAL PROBLEM.

THE recent meeting of the American College of Surgeons in Montreal afforded an opportunity for full and free discussion of the hospital problem, more particularly in Quebec Province. Steady progress is being made in the survey of the hospitals in this province by the American College of Surgeons, the aim, of course, being to bring them all within certain standard requirements. The proportion of hospitals so far approved is 72 per cent. This compares with a percentage of approved hospitals in Ontario of 66.7; in Alberta of 83.3; in British Columbia of 56.3; in Manitoba of 81.8; in New Brunswick of 100; in Prince Edward Island of 100. For the whole of the United States and Canada the percentage of approved hospitals is 75.5.

The situation in Montreal as regards the support of the hospitals is still unsatisfactory. The two largest hospitals here, the Montreal General and Royal Victoria, continue to show large financial deficits each year, which are met mainly by the generosity of private subscribers. It is true that the Provincial Government has done much, especially in contributions towards buildings, and compares favourably with the other Provincial Governments in this respect. But the solution is by no means yet reached. A committee of aldermen has been formed and has devoted much time to the study of the problem, but so far we still await its recommendations. The hospital tax (5 per cent. on meals in restaurants costing one dollar or more) has been in operation for some time now, and has yielded a considerable sum; but naturally it was never expected to furnish complete relief.

A bulletin issued by the Department of Health on Canadian hospitals generally contains a census of the hospitals for 1925, and shows that there are 676 in Canada, not including those for mental patients, or sanatoriums for tuberculosis. Of these 388 are public, 259 are private, and 29 are Red Cross. The number of hospitals and beds in each province is as follows:

Province.	Hospitals.	Beds.
Nova Scotia	29	1,313
New Brunswick	20	933
Prince Edward Island	3	185
Quebec	48	4,012
Ontario	176	9,955
Manitoba	46	2,872
Saskatchewan	115	2,247
Alberta	132	2,871
British Columbia	101	3,587
Yukon	3	72
North-West Territories	3	29
Totals	676	28,076

The report contains a map of Canada showing the location of each hospital, and this gives a vivid idea of the gradual penetration of hospital facilities to some of the most remote spots.

A similarly unsatisfactory hospital situation also exists in Vancouver. The president of the Vancouver Medical Association, in his retiring address, made a powerful appeal for the support of the profession in working out some plan by which the shortage of beds in the hospitals could be relieved. He impressed upon the local profession the necessity of having something definite to put before the public whenever legislation in hospital matters was brought up, as it seems likely it soon will be.

THE TRAINING OF NURSES.

The nursing profession generally has also had an opportunity to bring forward some of its problems for discussion by medical men. At the meeting of the American College of Surgeons mentioned, one session was devoted to discussion on nursing schools and the treatment of nurses themselves. It was fully admitted that the modern nurse has more demanded of her as regards the technical accessories of medicine, and for this reason it has been necessary steadily to expand her training. But it was also the feeling of some of the leading medical men that there was a danger of nurses being taught too much of scientific details, at the expense of such fundamentals as dietetics for instance.

Those responsible for the training of nurses emphasized the difficulties they had to meet as regards the general education of those they had to train for a profession upon which so many additional demands were being made. These demands made a good general education absolutely necessary. Consequently nursing schools were making unprecedented demands on their hospital boards. Above all, the quarters for the nurses must be as comfortable as possible, as beyond any doubt the quality of the training was becoming a severe tax on the students. It was held by one speaker that small hospitals should not have training schools for nurses unless they could be given the modern type of training. Graduate nurses should be engaged in such instances. It was also shown that the number of nurses is not increasing—partly, it was said, because of the increasing tendency towards specialization in nursing. As an instance of the trend towards more elaborate methods of training in nursing, there is the newly finished nurses' training school at the Montreal General Hospital. It had been found for some years that the living quarters and training school facilities for the nurses were quite inadequate, and indeed were in a state which seriously hampered the development of the hospital. With the very generous help of the Provincial Government (which found its complement in the devoted interest and private gifts from the governors of the hospital themselves) a combined home and training school of the most modern and commodious type has been added. This was formally opened a few weeks ago by the Premier of the province, and the tour of inspection which followed revealed a most striking wealth of detail and technical equipment for teaching. One might well have been permitted at times to ask if this was not, after all, a medical school!

England and Wales.

THE LONDON FEMALE LOCK HOSPITAL.

LORD RADSTOCK opened, on March 23rd, a new unit and operating theatre for the treatment of genito-urinary diseases at the London Female Lock Hospital, erected at a cost of £1,200. Mr. Charles Gibbs, senior surgeon to the hospital, stated that in the new ward it was proposed to treat patients with serious abdominal complications; hitherto such cases had been transferred to Charing Cross Hospital. An *x*-ray apparatus was still required for the unit. The new ward would also be available for the more serious operative procedures connected with childbirth, and would remedy to some degree the great scarcity of beds in London for genito-urinary diseases in women. Necessitous patients would be admitted free and other patients would be accepted who could afford to pay a small sum each week. Reference was made to the fact that the London Lock Hospital had reached its 180th year.

SUSSEX PROVIDENT SCHEME.

At the annual meeting of the Sussex Provident Scheme on March 19th it was announced that during 1926 payments amounting to £7,750 had been made to various hospitals for services rendered to subscribers to the scheme; the cost of administration had only been £493. During the year under review there had been a net increase of 1,823 subscribers and 2,493 dependants. In-patient treatment had been secured for 1,058 persons for a total of 19,290 days; 3,277 had been treated as out-patients. Since the commencement of the scheme five years previously £23,876 had been distributed to hospitals. Major P. A. S. Crawley, J.P., chairman of the Sussex scheme, commented on the difference in cost between various hospitals as regards both out-patient and in-patient treatment. He thought a considerable reduction in expenditure could be brought about by the hospitals agreeing to amalgamate their out-patient departments and to establish a general centre for out-patients near Brighton station.

FINCHLEY MEMORIAL HOSPITAL.

The medical staff of the Finchley Memorial Hospital has presented Sir D'Arcy Power, K.B.E., F.R.C.S., with his portrait to commemorate his service as consulting surgeon since the opening of the institution. Dr. T. Godfrey, chairman of the medical staff, in making the presentation, expressed the desire of the staff, now that Sir D'Arcy Power had retired from the active work of the hospital, to provide a permanent record of their appreciation of his services and of the affectionate esteem in which he was held. In acknowledging the gift Sir D'Arcy Power referred to the great interest he found in the work of the hospital and in watching its growth. He returned the portrait to the secretary, who, in the absence of the chairman and vice-chairman, accepted it on behalf of the Committee of Management for a permanent place in the board room. As a memento of the occasion a small photographic reproduction of the portrait signed by the medical staff was presented to Sir D'Arcy Power.

Scotland.

NEW REGULATIONS FOR THE EDINBURGH M.D. DEGREE.

AT a meeting of the Edinburgh University Court on March 21st, a regulation for the examination for the degree of M.D. was adopted on the recommendation of the Senatus. The object of this new regulation is to provide an examination suitable for testing either persons who have been in general practice or those who have been occupying their time in research work. The examination is to consist of two parts, a major and minor. For those who have been doing clinical work the major part will be an examination in clinical medicine, including a practical and oral examination and a written paper in medicine and therapeutics, while the minor part will be a special branch of medical science or practice professed by the candidate and to be approved by the Faculty. For those who have been doing research work or engaged in some special employment, the major part will consist of a special branch of medical science or practice professed by the candidate and approved by the Faculty, and the examination will include a practical and oral examination and a written paper in the subject proposed. The minor part for these persons will be an examination in clinical medicine. At the same meeting of the court it was intimated that a grant of £6,500 had been received from the University Grants Committee to be applied towards the extension of the University Women's Union.

POOR LAW REFORM IN SCOTLAND.

The problem of Poor Law reform was discussed by Dr. W. E. Elliot, M.P., Under Secretary of State for Scotland, at Glasgow on March 24th, at a meeting held under the auspices of the Central Division Unionist Association. The speaker said that there was no more thorny set of questions than those bound up in the words "Poor Law," and the difficulties had been accentuated of late with the crisis of unemployment which came upon the country after the collapse of the post-war boom, from which the country had not yet escaped. There was no reason, however, why Scotsmen should not grapple with this question once again. In May of last year the famous circular of the Board of Health had been issued, which was in fact a Cabinet decision, and which stated that at that time it was to be considered that the dependants of people engaged in any industrial dispute should be eligible for Poor Law relief. There had been great apprehension and uneasiness in Scotland that this was a step against national tradition. He himself considered that this apprehension was unfounded, for it was more important to remember that some reform of the Poor Law system was inevitable, and it was necessary, in the steps taken to deal with this emergency, to consider what steps would be likely to be necessary when the recasting of this fundamental social law was brought about. In England the position was more advanced than in Scotland. The essence of the proposals for Poor Law reform in England was the abolition of boards of guardians and the handing over of their duties to county and town councils. The abolition of parish councils in Scotland would require much discussion, for the parish was one of the foundation stones of the whole of their society. People should be making up their minds on the problems that would arise in the course of a year or two in Scotland, and should be able to put constructive proposals before the Government in this matter.

STANDARDIZATION OF DRUGS.

At a meeting of the Pharmaceutical Society in Edinburgh an address was delivered by Dr. J. H. Burn, director of the society's pharmacological laboratories in London, on the nature and scope of the work of these laboratories. During the first fifteen months a controversy of some fifteen years' standing with reference to the action of ergot had been settled. Attempts had been made to set up physiological standards for substances like digitalis, strophanthus, and squills, which, he said, was by no means easy. In the *United States Pharmacopoeia* biological tests had been included for such substances, but experience had shown that these would require revision. Preparations of these drugs made by using a definite quantity of the drug might give very serious results. In the case of digitalis, for example, one preparation had been found twice as strong as the standard, while another was 60 per cent. below the standard. This would indicate the need to fix a standard by a biological test. The importance of this work was emphasized by the recent passing of the Therapeutic Substances Act, which schedules drugs requiring to be standardized with the greatest possible care, and he believed that the work of the society's pharmacological laboratories had already been recognized as of great practical value in this direction.

TRAINING AND CARE OF THE BLIND.

A circular has been issued by the Scottish Board of Health to town and county councils directing attention to recommendations in the third report of the Scottish Advisory Committee on the Welfare of the Blind. It is pointed out that the question of home employment should receive more attention from institutions, and that blind persons should be trained either to work in an institution or to become home workers, older entrants being generally trained for the latter purpose. Those who returned to their own homes after training should continue in the employment, and under the supervision, of the training institution under an approved scheme of assistance to home workers. Only one institution had up to the time of issuing the circular submitted a scheme to the Board of Health for outdoor employment, and the board suggests that outdoor societies for the blind, as well as institutions, should consider carefully the possibilities of undertaking or developing this service. Voluntary agencies are reminded that the grant is payable to them by the board in respect of the conduct of such schemes.

PAISLEY MATERNITY AND CHILD WELFARE CENTRE.

H.R.H. Princess Mary on March 19th formally opened the Russell Institute, a maternity and child welfare centre which had been presented to the town by the late Miss Agnes Russell of Muirfield. The Princess was received by Provost Crawford, and showed much interest in the equipment of the institute, devoting special attention to the dental, orthopaedic, x-ray, and artificial sunlight departments. Provost Crawford, in an address of welcome, said that owing to the generosity of the citizens of Paisley, the question had never arisen as to whether infirmaries and other institutions for the treatment of disease should be a charge upon the rates. The present institution was an example of this public-spiritedness, as well as a memorial erected by the late Miss Russell to the memory of her brothers Robert and Thomas, whose business and social interests were centred in the burgh. In June last Miss Russell died in London at the age of 83, just before the date on which she was to have received the freedom of the burgh.

EDINBURGH HOSPITAL FOR WOMEN.

At the annual meeting of the Edinburgh Hospital for Women and Children and of the Elsie Inglis Memorial Maternity Hospital, presided over by Dr. Isabel Venters, Lady Walker, the honorary secretary, submitted the report, which showed that the increase in the numbers attending the women's hospital and dispensaries had been remarkable. In the Elsie Inglis Memorial Hospital there had been 647 births, with 213 attended in the neighbouring district, an increase of 321 on the previous year's figure. In the Bruntsfield Hospital there had been 55 extra patients over those in 1926. In the dispensary ante-natal clinic there had been 3,595 attendances, an increase of 1,524, while there had been 4,546 attendances at the newly developed child welfare clinics. In the venereal diseases clinics the numbers attending had reached 5,680, an increase of 854 on those of the previous year. The ordinary expenditure had amounted to £12,079, and the receipts to £9,300. The cost per bed in the Bruntsfield Hospital worked out at £143, which was £7 less than the figure for last year.

SMALL-POX IN DUNDEE.

An outbreak of small-pox in Dundee has occurred, and by March 25th the total number of cases was reported to be 19. The Lord Provost has issued an appeal to the citizens on the subject of safeguarding themselves by vaccination or revaccination against the spread of the disease. It is noteworthy that all the persons who had taken small-pox in Dundee are children of school age who had not been previously vaccinated.

THE CHURCH AND MEDICINE.

The annual meeting of the Church of Scotland Deaconess Hospital was held in Edinburgh on March 25th. The Rev. Dr. Norman Maclean, Moderator-Designate of the Church of Scotland, presided. Lord Sands, chairman of the board of management, submitted the annual report, which showed that a total of 6,912 persons had received the benefits of the hospital during the past year. The patients had mainly been drawn from Edinburgh, Midlothian, and Linlithgow, but a considerable number had come from various distant parts of Scotland. The speaker pointed out that 1926 was the first year in which the hospital had been faced with a deficit (£1,135) on the year's working. This, however, had been adjusted, leaving only a net adverse balance of £97 to be carried forward, but the board desired to call attention to the fact that they were responsible for providing an income of over £6,000 a year to the hospital. They trusted that the Church would respond, though no doubt the real cessation of their anxieties in regard to funds would be the permanent endowment of all the beds, towards which considerable progress had already been made. The chairman, in an address, said that there was no more beneficial type of work than that done by this hospital in a crowded district like the Pleasance of Edinburgh. He considered that medical men at the present day did not sufficiently study the history of the development of their own profession. The Church was the mother of all hospitals, for at the Council of Nicea in 325 A.D. an instruction was issued that in all cities there must be a hospital for poor and infirm pilgrims. At the present day there were scores of hospitals in France which went back to the ninth, tenth, and twelfth centuries. The Deaconess Hospital was a witness in the midst of Edinburgh to the rock whence all hospitals had been hewed, and when Church union came he thought there would be no more adverse balances, for they would have double constituencies to which to appeal. Mr. A. Logan Turner, F.R.C.S., President of the Royal College of Surgeons, Edinburgh, moved the adoption of the report, which was seconded by the Rev. Dr. Bogle, secretary of the United Free Church of Scotland. The latter remarked that the relation between the Church and Medicine had fluctuated in the course of history, for in the Middle Ages there was no separation between the two professions, and this tradition had survived in many respects. He was afraid, however, that the study of history was not pursued in the medical profession as it might be, and that very excellent traditions were losing much of their force because of ignorance of their origin.

Ireland.

ROYAL VICTORIA HOSPITAL, BELFAST.

THE 134th annual meeting of the Royal Victoria Hospital, Belfast, was held in the King Edward Memorial Hall of the hospital on March 18th. The Prime Minister of Northern Ireland, Lord Craigavon, occupied the chair, and there was a large attendance. The chairman congratulated all concerned on the most satisfactory character of the report, which reflected the highest credit upon the management. The accommodation for both intern and extern patients had been increased by 25 per cent. a year ago; £130,000 was expended out of capital, which meant a depletion of income of nearly £7,000 a year. In addition there was the increased cost of maintenance; so that a sum of about £1,200 was needed to meet the weekly expenditure. And yet at the end of a year characterized by profound depression in local industries and extensive unemployment the account closed with a debit balance of only £1,729. The systematic weekly contributions from workers' committees reached the splendid total of £19,067. Treatment to-day, with all its numerous specialties and research, was very much more expensive than in the past, and yet strict but not undue economy had brought a decrease of £14 in the yearly cost per bed. Lord Craigavon expressed the great regret that all felt that Professor Lindsay, who had been chairman of the board of management for eight years, and had been connected with the hospital in various capacities since 1883, was now retiring. He moved a resolution of thanks to Professor Lindsay for the admirable manner in which he had occupied the chair of the board of management and his devoted attention to the welfare of the hospital. Professor Lindsay was to be succeeded as chairman by the Marquess of Dufferin and Ava. The motion was seconded by Mr. R. E. Herdman, D.L., chairman of the Harbour Commissioners, supported by the Marquess of Dufferin and Ava, and passed with acclamation. Mr. Howard Stevenson, F.R.C.S., honorary secretary of the Medical Board, moved the adoption of the report of the medical staff, and drew attention to the increasing number of those seeking medical advice and treatment at the hospital; all did not realize that the institution was now a congeries of small special hospitals or units, each of which had special work to perform. Sir Thomas Houston, M.D., who seconded, praised the splendid team work carried on. An extension was needed to meet the requirements of people of moderate means, who could not pay the fees incident to private hospitals. He referred with gratitude to the donors of blood for transfusion, but said the list was not large enough yet. A vote of thank to the medical, surgical, dental, and nursing staffs for their services during the year was passed unanimously. Professor Lindsay moved a vote of thanks to the Prime Minister for presiding, and congratulated him on the honour which had lately been conferred on him; the motion was received with applause, and Lord Craigavon briefly replied.

MAJOR J. A. SINTON, V.C., I.M.S.

At the spring congregation of the Queen's University of Belfast, on March 24th, the honorary degree of D.Sc. was conferred on Major Sinton, V.C., I.M.S. The Vice-Chancellor said that Major Sinton's distinguished undergraduate career was followed by one equally distinguished in the study of the science of his profession, and by the highest honour in the field. Major Sinton was received with great applause by the audience, and will have the heartiest congratulations of all who know him. Major Sinton, after holding the offices of house-surgeon and house-physician at the Royal Victoria Hospital, Belfast, was Riddell demonstrator in pathology in the University.

STILLORGAN CONVALESCENT HOME, CO. DUBLIN.

The annual report of the committee of management of the Stillorgan Convalescent Home for 1926 stated that the good work it did had been well maintained. The number of patients admitted during the year was 607. The income

for the year was £2,575 17s. 6d., and the expenditure £2,785 0s. 11d. The extremely high level at which food, fuel, etc., had to be purchased hampered the committee considerably in carrying on the work of the home. In proposing the adoption of the report at the annual meeting Dr. T. Gillman Moorhead, who presided, said that, despite the continual improvement in sanitary conditions, a better system of town-planning, and an improvement in the health of city populations, the larger number of city workers were, as regards health, only C3 instead of A1. In that lay the importance of treatment in the country. At the Stillorgan Convalescent Home the patients got good food, fresh air, and, in particular, plenty of sun. Six to eight hundred city workers were treated annually in this home, and since it was founded, sixty-five years ago, nearly 50,000 people had been treated. Dr. Moorhead referred to the revolution that had taken place in the finances of hospitals in the last ten or twelve years. With the war came higher costs for foods and drugs, and subscribers could not afford to increase their donations in proportion; so the patients who could pay were asked to contribute. During the last twenty-five years, Dr. Moorhead added, no patient recommended by him for the home had been refused. Again and again he had received letters from patients telling him of the benefit that they had derived from treatment at the home. He himself was firmly convinced that, from a medical point of view, convalescent homes were most necessary for the complete return to health of city workers who were recovering from a severe illness. He thought that the public were beginning to wake up to this fact.

Correspondence.

THE USE OF TUBERCULIN.

SIR,—Judging by recurrent references in the press, medical and lay, it would seem that the subject of tuberculin is regarded by many persons as a *terra incognita* which had hardly been explored save by a handful of adventurers who recounted their experiences in not strictly measured language. Is this really the case? Speaking as one who has used tuberculin much and consistently since its introduction in 1890, both for treatment and for diagnosis, I am puzzled to understand the difficulties frequently expressed.

For the last ten years the University of Edinburgh has included in its medical curriculum special training in tuberculosis. The course, which means thirty meetings, is very practical, and is compulsory on all students preparing for graduation. The subject has special consideration in the Final Examination. During the course, which deals with tuberculosis as a general infection and as it manifests itself in the various organs of the body, the properties and value of tuberculin, and the various methods of use for purposes of diagnosis and treatment, are discussed at length and richly illustrated by the exhibition of patients, etc. For tuberculin is in daily use, in one or other fashion, in the several medical institutions which are linked up with the University Department. As the University turns out an annual average of approximately two hundred medical graduates, the number of younger practitioners in Britain and the Dominions who have knowledge of the subject must be very considerable.—I am, etc.,

Edinburgh, March 26th. R. W. PHILIP.

INFLUENZA AND THE HEART: ADMINISTRATION OF RAW ADRENAL GLAND.

SIR,—In your leading article on "Influenza and the heart" (March 19th, p. 527) you speak of the low systolic pressure that characterizes the aftermath of influenza, and after discussing the parts played by the poisoned heart muscle (Dr. Shore's observation in 1918) and by the poisoned vasomotor mechanism (degenerated internal elastic layer and muscle of the media of vessels: Stoerk and Epstein, 1919), you come to Cowie and Beaven's suggestion (1919) that the suprarenal glands are damaged, or, at any rate, fail to function properly, as a result of the influenza poison. "But," you say, "the advantage that has been claimed for treatment with adrenaline and other similar methods has received no great measure of confirmation."

I have not tried adrenaline. I do not know how to use it for a chronic condition. But I have used raw adrenal gland and I find it effective.

For instance, on March 17th a nurse, aged 50, is noted as having a systolic pressure of 92. "I feel good for nothing," were her words, "and don't care what becomes of me." After treatment by raw adrenal gland, and by nothing else, the pressure on March 22nd was 116, and she was bright and fit for some portion of her duty.

Again, a horseman, aged 22, recovered from exceptionally severe and neglected influenza, is noted on March 22nd as "weak," and having a blood pressure: systolic 112, diastolic 68. He takes four pieces of raw adrenal gland in the next twenty-four hours, and has no other treatment. Next day (March 23rd) he "feels much better, much more like doing a day's ploughing," and his pressure is systolic 122, diastolic 72 (mercury instrument, and auditory method).

My experience of using the raw gland is too recent and limited for dogmatism; but I think it works. And I think so with the more confidence because I have had considerably more experience of the use of raw adrenal gland in another condition, asthma. In cases of chronic and intractable asthma, resistant to other treatment, I have convinced myself by a good many months' trial of the reality of the good effect of raw adrenal gland. But that is another story—a story I hope to tell more formally, at more leisure. Your leader constrains me to mention now this simple observation:

If a sheep's adrenal gland, which is a little thing like a reddish-brown bean, or tiny kidney, about an inch long, be cut into six pieces across the length, so that each piece contains both cortex and medulla, and if one such piece be taken, raw, in a teaspoonful of cold water, or in a bit of bread, on an empty stomach, thrice daily, by the patient with post-influenzal debility, the headache and the lassitude clear up and the patient soon approaches normal health.

I must add three notes in a minor key:

(1) I have mentioned asthma. A bit of adrenal gland is disappointing when an attack is on. It will not stop the attack. All I find is that chronic asthmatics, to whom other treatment designed to remove the provocative cause is being given without success, or with very incomplete success, improve when they take the raw gland. Attacks tend to recur when they stop taking it. I hoped that the sheep's gland would awaken the patient's own adrenals to activity. My evidence on that point is incomplete.

(2) One asthmatic patient, on taking about a third of a gland in a single dose, gets distressed. There is nausea and a sense of apprehension. For half an hour the symptoms are severe. This patient, however, persists in taking the gland in small doses because "she keeps freer from asthma when she is taking it."

(3) One post-influenzal patient, after experiencing rapid relief from lassitude during several days in which she took the gland, then had a bilious attack (that is, felt sick and distressed). That soon passed.

I have seen no other ill effects of the use of this remedy (unless a transient attack of gout was due to it, in a patient strikingly relieved by a course of raw gland from the influenzal aftermath). But doubtless any extended use of it should be safeguarded by watchfulness lest haply it provide glycosuria.

There is one thing to add. Sheep's adrenal keeps worse than almost any other part of the carcass. One butcher I know removes the glands "to prevent the meat going bad."

The doctor who uses this remedy will have to find the glands for himself—in the fat above the kidney and not so close to that organ as human anatomy would lead him to expect. The butcher sometimes knows them (some do not), but has no name for them.—I am, etc.,

Holmes Chapel, Cheshire, March 25th. LIONEL JAS. PICTON.

SPASTIC PARAPLEGIA.

Sympathetic Ramisectomy.

SIR,—Most of us who read the first accounts of sympathetic ramisectomy were under the impression that this operation was the outcome of the theoretical, experimental, and clinical work of Drs. Hunter and Royle, and we understood that, while Dr. Royle was concerned more with the experimental and clinical side of the question, he associated himself also with the views, anatomical and physiological, expressed by Hunter. Hunter quite definitely put forward the hypothesis that the functions of movement and posture are performed by entirely different sets of muscle fibres—an hypothesis which in the present state of our knowledge I venture to think cannot be supported.

When I recounted my own small experience of sympathetic ramisectomy to the Neurological Section of the Royal Society of Medicine on February 11th, 1926, I made a few introductory remarks which I did not then think worth elaborating in the *Proceedings* of the society.

For a long time I had been attracted by the hypothesis of the dual innervation of skeletal muscle, and soon after Sherrington's paper on the postural activity of muscle appeared in *Brain* in 1915 I began to make some experiments to see whether division of the sympathetic nerves would have any effect upon the spasticity of hemiplegic limbs. In an anatomy book I found a picture of the brachial plexus receiving a spray of communicating branches from the first dorsal ganglion of the sympathetic and some also from the inferior cervical ganglion, and I was then under the impression that at least a considerable part of the sympathetic nerve supply of the upper limb was derived from these branches. In a typical case of infantile hemiplegia in a youth I removed the first dorsal and inferior cervical ganglia with all their branches. This operation was followed, of course, by paralysis of the cervical sympathetic on that side, but it had not the slightest effect upon the muscular tone or the vascularity of the upper limb.

I was then reminded of the work of Wood Jones, who showed that the communicating branch from the second dorsal nerve to the brachial plexus is composed almost entirely of sympathetic fibres, and he suggested that the vascular symptoms which occur in some cases of cervical rib might be due to pressure upon these fibres as they join the lowest cord of the plexus lying upon the rib. I therefore, in another case of infantile hemiplegia, excised the communicating branch from the second dorsal nerve and also the first dorsal ganglion with its branches. This operation also had no effect upon the muscular tone or the vascularity of the upper limb.

I then turned to Leriche's operation of stripping the tunica adventitia, and with it the periarterial sympathetic plexus, from a section of the main artery of a limb. On theoretical grounds this operation never appealed to me, because I thought that one of the few things we did know about the peripheral distribution of the sympathetic was that the arterial nerve supply is segmental and the periarterial plexus does not in any sense constitute a tract running along the artery to supply the distal parts. I have done Leriche's operation only once, and that was on the brachial artery of a woman with typical hemiplegia, and it had no lasting effect upon either the muscular tone or the vascularity of the limb. I have seen a few other cases in which either Leriche's operation or the injection of alcohol into the sheath of the artery had been done for one reason or another, but I have never seen any permanent effect from either procedure.

It was therefore with great interest that I read the first accounts of Hunter and Royle's work as soon as they were available, and I believe I was one of the first to try the operation of sympathetic ramisectomy in this country, my bias (if any) being all in favour of confirming Royle's results if possible.

But before attempting my first case I had already heard some criticism and counter-criticism of the operation. The defence bluntly amounted to this—that those who had done the operation and had failed to obtain results similar to those of Royle were either careless neurologists who could not recognize the plastic tonus described by Sherrington, or they were incompetent surgeons who thought they had divided the sympathetic rami, but really had not.

I was determined that criticism on these points at least should be out of the question. The cases selected by me were examined by some of the best known neurologists in this country, and they were chosen particularly from the point of view of showing the effect of sympathetic ramisectomy on plastic tonus. The operations themselves were conducted with extraordinary care and deliberation as "demonstration" operations in the presence of highly qualified and very critical assistants. Every step in the operation was verified. When the rami and the sympathetic trunk (in the lumbar operations) had been exposed, a pause was made and these structures were both demonstrated by myself and examined independently by my assistants, so that there should be no possible question of their identity. Each ramus was then picked up in turn, called by name, and when everyone was agreed upon its identity, it was divided in view of those assisting me; and similarly with the lumbar trunk. No case in which there has been the slightest doubt as to the destruction of the sympathetic rami—and the correct ones—has been included in my small series.

I hope that before long Dr. Royle will be able to demonstrate to us here in London that sympathetic ramisectomy produces not only constant results but more pronounced results than were obtained in any of my cases; for I have to confess that even in the "about half" of my cases which gave a positive result the rather slight diminution of muscular tone which followed the operation did not appear to me to be of great benefit to the patients.—I am, etc.,

London, W.1, March 28th. A. S. BLUNDELL BANKART.

CATARRHAL VACCINES.

SIR,—The value of prophylactic vaccines against the common cold and feverish chill is not yet accepted generally as proven. Though there are an increasing number of doctors who believe in and practise this method of preventive treatment, there are probably many more who are waiting for further proof of its efficacy before adopting it or advocating it in their own practice.

Evidence from the clinical side of the value of vaccines can be got through the accumulation of statistics amongst a more or less fixed population, living under similar conditions for a considerable period, and a public school does offer such conditions. In such an institution vaccines cannot be given compulsorily, but only with the parents' consent, and it will probably be found that the relative numbers of acceptances and refusals will be such as to offer a reasonable control experiment, though the word "experiment" is an unfortunate one in this connexion, so far as the public is concerned.

An attempt has been made at one public school during the year 1926 to supply this evidence. Records were kept throughout the year of every boy reporting sick with cold or feverish chill. As at this school the school hospital is the only place where a boy can report sick, the large majority of those affected to any extent are recorded; but it is recognized that some of those with colds only would not come for treatment, and to that extent the accuracy of the figures given below is vitiated.

The vaccine used in almost all cases was the anti-catarrhal vaccine supplied by Parke Davis, prepared by St. Mary's Hospital. Three doses were given at weekly intervals: to those below 15 years 0.25 c.cm., 0.4 c.cm., 0.6 c.cm., to those above 15 years 0.3 c.cm., 0.5 c.cm., 0.75 c.cm.; 170 boys were inoculated in January before returning to school, the remaining fifty in the first three weeks of the Lent term. Ill effects were trivial. Three boys reported a temperature of 100 to 101° for about twenty-four hours. Two felt faint a few hours after the first dose. One had a slight local reaction after the third dose. One reported a cold after the first two doses.

Though the total number of boys in the school remained constant throughout the year, the number of those inoculated varied, as some boys left and new ones came. The following figures therefore are given for each term separately.

	First Term.	Second Term.	Third Term.
No. of Boys in School.			
Inoculated	220	220	200
Non-inoculated	315	315	335
No. of Colds	160	35	86
Inoculated ...	50=22.7%	10=4.5%	18= 9.0%
Non-inoculated	110=34.6%	25=8.0%	68=20.0%
No. of Feverish Chills ...	33	17	51
Inoculated ...	10= 4.5%	4=1.8%	16= 8.0%
Non-inoculated	23= 7.3%	13=4.1%	35=14.4%
Days Lost	413	104	980
Inoculated	80. Av. 1.3	19. Av. 1.3	263. Av. 7.7
Non-inoculated	333. Av. 2.5	85. Av. 2.5	717. Av. 7.0
Complications.			
Inoculated (16)	2 Otitis 2 Bronchitis	1 Adenitis	1 Otitis (abscess) 6 Bronchitis 3 Broncho-pneumonia 1 Carditis
Non-inoculated (37) ...	5 Otitis (2 abscess) 9 Bronchitis 2 Broncho-pneumonia	2 Otitis 2 Bronchitis	5 Otitis (5 abscess) 2 Bronchitis 8 Broncho-pneumonia 1 Adenitis 1 Pleurisy

The figures in the group of "days lost" are not quite clear. By the average is meant the days lost by those who had colds or feverish chills in the two groups. If the average of days lost was taken amongst all the inoculated and non-inoculated it would, of course, be very different, and for the whole year would show:

Inoculated	0.36, 0.09, 0.76
Non-inoculated	1.0, 0.26, 2.1

From this aspect the loss of time was nearly three times as great amongst the group of non-inoculated as amongst the inoculated. The rest of the figures show a slight but definite advantage for the inoculated. To the observer this advantage was the more noticeable as regards the complications, the severity of which was much more marked in the non-inoculated.

Another point which cannot be shown statistically is that amongst the inoculated were the large majority of those known to be particularly susceptible to colds and coughs; this would tend to raise the percentage incidence of this group, but observation showed that these "inoculated susceptibles," if attacked by cold or catarrh, were definitely less affected than might have been expected from their previous record and medical history at the school. The suggestion is that their immunity was raised. It will be noted that the complications were more numerous and more severe in the winter term, and the average loss of time very much greater. No doubt the small amount of sunshine during the late autumn delayed convalescence, but it is not unreasonable to suggest that the hypothetical good effects of the vaccine given in January had passed away. Certainly the Lent term was very healthy, and never had the colds and coughs been so few or so slight, and never had so little medicine been used.

During the year 1926 the Medical Officers of Schools' Association issued a circular to a large number of schools on the subject of catarrhal vaccines, and through the kind help of the authorities of the bacteriological department of St. Mary's Hospital got prepared a special "school vaccine" from a large number of swabs sent up from schools in various parts of the country.

This special vaccine was put on the market in December last by Parke Davis, and it is hoped that sufficient use will have been made of it during this year to form an opinion as to its value.—I am, etc.,

L. R. LEMPRIERE,
Medical Officer, Haileybury College.

March 28th.

HEREDITARY FAMILIAL CONGENITAL HAEMORRHAGIC NEPHRITIS.

SIR,—In his paper, published in the JOURNAL of March 19th (p. 504), Dr. A. Cecil Alport adds some interesting details to the history of the family first described by Leonard Guthrie in 1902 and subsequently by me in 1912. Unfortunately he appears not to have seen a later paper, published in the *Guy's Hospital Reports* for 1923, which contains particulars about the members of the third generation born since 1912. In this paper I also refer to Case No. 6 as being still alive, and I record the fact that Nos. 14 and 15, said by him to be unaffected, had, as a matter of fact, suffered from attacks of haematuria. So far as I can recollect, Dr. Alport is incorrect in stating that Cases 10 and 11 were deaf.

In addition to the cases of familial nephritis collected by Dr. Alport, I referred in my paper of 1923 to three other families. Benson[1] in 1893 reported the case of four brothers and sisters who suffered from acute nephritis in a period of four years, three of whom died; Fergusson,[2] in 1910, described a family in which the father aged 87, the mother aged 78, and eight children, whose ages varied between 45 and 56, had albuminuria unaccompanied by other symptoms; and in 1920 Thomson and MacAuley[3] reported four cases of acute nephritis occurring after influenza in a family of eight children; all recovered completely.—I am, etc.,

ARTHUR F. HURST.

New Lodge Clinic, Windsor Forest, March 22nd.

SIR,—Dr. A. Cecil Alport may be interested to hear of a family some members of which have been under my care suffering from haematuria of the same nature as that mentioned in his interesting article (March 19th, p. 504). Fifteen years ago I attended a woman, then aged 34, suffering from haematuria, the cause of which I did not then recognize. Last week I saw her again for the same complaint. Two years ago I was called to a male patient, aged 39, who had severe haematuria; three months later he had another severe attack. I sent him to a surgeon, who eventually removed a cystic kidney (right) weighing 8 lb. Four months after the operation he had another attack of haematuria. As far as I know he has had none since. His father died of "kidney disease." During January of this year a man, aged 46, came to see me complaining of passing blood in his water. This came on after rather a severe blow in the abdomen. There was severe pain in the right loin, but neither kidney was palpable. He was back at work in about a week. As his name was similar to that of the last patient mentioned I made inquiries as to his family history, and elicited the following facts. His father died as the result of a "seizure" seven years previously. He suffered from haematuria, having on an average one attack yearly. Three brothers, aged respectively 40, 48, and 49, all suffered from the complaint. The one aged 49 died suddenly, the cause of death being certified as "haemorrhage." Until I saw the last patient I was not aware that any of these three were related; he informed me that the first patient was his sister and the second his cousin. None of the three patients referred to suffer from deafness. —I am, etc.,

FREDERICK H. RUDGE, M.R.C.S.

Lostwithiel, Cornwall, March 22nd.

THE SURGERY OF GASTRIC AND DUODENAL ULCERS.

SIR,—In the article by Mr. H. S. Souttar in the BRITISH MEDICAL JOURNAL of March 19th (p. 501) on 1,275 cases of gastric and duodenal ulcers admitted to the surgical wards of the London Hospital in 1923-25 he says:

"Of the 1,275 London Hospital cases above referred to, 660 were gastric ulcers with a male incidence of 70 per cent., and 615 were duodenal ulcers with a male incidence of no less than 86 per cent.—figures which agree closely with those found elsewhere by both English and American surgeons."

So far as this statement refers to the male incidence I have no comment to make; but the ratio of gastric to duodenal ulcers does not coincide with our experience in Leeds. In the years 1924 and 1925 there were admitted to the surgical wards of the General Infirmary at Leeds 559 cases of chronic gastric and duodenal ulcers, of which 148 were gastric and 411 duodenal—that is to say, an incidence of 2.7 to 1 in favour of duodenal ulcer; and this

[1] A. H. Benson: *Lancet*, 1893, i, 588.
[2] J. N. Fergusson: BRITISH MEDICAL JOURNAL, 1910, i, 639.
[3] W. W. D. Thomson and H. F. MacAuley: *Lancet*, 1920, i, 461.

preponderance of duodenal ulcers over gastric has held good for many years—in fact, ever since we realized that the dyspepsia associated with haematemesis in young women is seldom due to chronic gastric ulcer. I do not think this accounts for Mr. Souttar's figures showing more gastric than duodenal ulcers, because he gives a male incidence in the former as high as 70 per cent.

There is, however, a possibility of confusing duodenal and gastric ulcers situated near the pylorus; indeed, some Continental surgeons go so far as to say it is impossible to differentiate these with the organs *in situ*. We have become accustomed to rely upon the white line of the pylorus and the pyloric vein as landmarks of sufficient accuracy to enable us to say that an ulcer to the right of these is duodenal and to the left gastric. If the London Hospital statistics are not dependent upon some such clearly defined anatomical differentiation between what is gastric and what duodenal, I can see a good reason for the discrepancy between their recorded results and ours. It is difficult to believe there is really so marked a difference between the localization of ulcers in the north and south of England.—I am, etc.,

Leeds, March 27th. E. R. FLINT.

MALIGNANT DISEASE OF THE THROAT.

SIR,—I heartily agree with Mr. Syme (March 19th, p. 540) that it is much to be desired that patients suffering from, or suspected of, cancer of the throat should see the throat surgeon at as early a stage as possible. I do not think, however, that the general practitioner should bear the entire blame for such belated attendance and for the advanced condition of many cases when first seen by the specialist, since the patient himself is often most remiss and dilatory in going to the practitioner, even delaying until the malady has drifted on to an inoperable condition.

During the last three months I have met with two cases—both in men of over 60 years of age—which plainly point to the dangers, not only to the patient, but to the public. Both were brought at once by their doctors for confirmation of their diagnosis, and were suffering from advanced cancer of the throat, but had been so careless and ignorant that one had arranged to be married at an early date, and the other had been regularly partaking in church of the Holy Sacrament.

My experience is that there has been during recent years a greatly increased vigilance and correctness of diagnosis on the part of the general practitioner; this, I think, is certainly an outcome of greater facilities for post-graduate study, and the pressing and efficient way in which medical journals and literature have emphasized the urgency for improved knowledge on the doctor's part.

With regard to lay enlightenment, however, much yet remains to be accomplished, and I would urge the imperative necessity for an extension of such measures as were recently mentioned by Sir Berkeley Moynihan for starting in Yorkshire itinerant vans with lecturers to give demonstrations all over the country to teach the laity. Lectures might also be delivered by the junior members of the staff of both general and special hospitals on the prevention of disease.—I am, etc.,

London, W.1, March 27th. WILLIAM STUART-LOW, F.R.C.S.

PHARYNGEAL DIVERTICULA.

SIR,—It was my privilege in my earliest days in the dissecting-room to see the dissection of the historic pharyngeal diverticulum described by Morison Watson. I trust my sentimental, in addition to my technical, interest in it may justify my trespassing on your space. It was unquestionably pharyngeal, and air may have entered it in sufficient quantity to give it some claim to the title of aerocele. It is highly improbable, however, that food could have done so in sufficient quantity to cause much distension, in view of the small size of the opening. To my mind it was more likely to be produced by the entrance of pharyngeal secretions, and I think the term "pharyngocele," or Watson's non-committal one of "pharyngeal diverticulum," is the most appropriate. It was no doubt originally a small congenital defect in closure of the second branchial cleft, distended by the accumulation of air and secretions, and, therefore, eventually a pressure pouch.

Godlee's case is more obscure, and the tracing of the pedicle to the thyro-hyoid membrane in association with the increase of swelling when the subject "held his breath and blew," would suggest at first glance a laryngeal origin. It is difficult to give a definite meaning to the somewhat loose expression "held his breath and blew," but with goodwill it might be interpreted to signify that he closed his larynx (by means of the ventricular bands) and made an expiratory effort, or that he closed his lips tightly (with or without pinching the nostrils) and then "blew." Swelling in the former condition would indicate a laryngeal communication, while in the latter it might be pharyngeal. The fact, however, that salivary glandular structures (described with minute detail) were found in the wall of the sac when vouched for by Godlee (and for any who knew him this is conclusive), proves beyond question that the cavity was originally, at least, of pharyngeal origin.—I am, etc.,

London, W., March 25th. JAMES DUNDAS-GRANT.

SIR,—In my letter of January 8th I pointed out that Dr. Irwin Moore was obviously wrong in asserting that the case of pharyngeal pouch so carefully recorded by Godlee and Bucknall was really a laryngocele. The marked dysphagia, the uncomfortable sensation shooting up to the ear on squeezing the sac, and the presence of glands "representing in every detail of their structure a mucous salivary gland," as found in several other cases of pharyngocele, clearly established the fact as claimed by Godlee and Bucknall, that their "pouch was obviously of the pharyngeal variety." The presence of salivary gland tissue alone knocks the bottom out of Dr. Moore's argument that the pouch was laryngeal and not pharyngeal. Dr. Moore now brings forward a "somewhat dramatic story" which he got from Sir Arthur Keith, from which it appears that the latter wrote to Godlee pointing out that the description left no doubt that it was a laryngeal air sac, and that Godlee replied accepting this view. Dr. Moore claims that this settles the question in his favour. It does nothing of the kind, in my opinion, and, moreover, the story has a sequel. Soon after the publication of Halstead's paper in 1904 (*Annals of Surgery*) on diverticula, in which the case under discussion was quoted, I met Godlee and talked the case over with him. He then said nothing about his having abandoned the idea that the air sac was pharyngeal (so that his conversion must have been short-lived and forgotten); but, on the contrary, he pointed out with enthusiasm his gratification that Bucknall (who was responsible for the pathological and literary research part of the paper) had been able to collect at least one British case, similar to theirs, in addition to half a dozen foreign ones (Kostanecki, *Virchow's Archive*, vols. 117, 120, 121). We can fairly conclude that though Godlee was temporarily converted by Sir Arthur Keith to admit the laryngeal origin of the sac to begin with, yet that, on conferring with Bucknall, he reverted to his original explanation of the case, otherwise he would surely have written a correction to the *Lancet*. This case must stand as reported.

Of course, it does not fit in with Dr. Moore's thesis to admit that Watson's case of pharyngeal diverticulum, of presumed branchial origin, was a pouch containing air, so he falls back on the generalization of Keith, that as it originated behind the thyro-hyoid ligament it could not contain air, and Dr. Moore now states that it was a "dilated branchial cleft sinus with a dilated saccular or cystic extremity." The use of the word "cystic" suggests that Dr. Moore is trying to make out this specimen of Watson's to be a true cyst, whereas the clear description of the case shows plainly that it was an undoubted air-containing pouch with a well defined mouth in the faucial region, and not a mere potential space or sinus, nor a cyst. Watson states that the sac terminated "inferiorly in a dilated cul-de-sac, which on being cut discharged a quantity of grumous material"; such material is often found in the cavities of the mouth, pharynx, and oesophagus in dissecting-room subjects, and is not a cystic content. Bland-Sutton, in his Erasmus Wilson Lecture in

1887 (*Journal of Anatomy*), quotes this case as a pharyngeal pouch of congenital branchial origin, and makes no suggestion of its resembling a cyst. This case also stands to controvert the view of Keith and Moore that all cervical air sacs are laryngeal in origin.

As regards Wheeler's case, the description clearly identifies it as a pouch containing only air during the time the patient was under observation and at operation. Dr. Moore asserts that it was a "pressure diverticulum or pulsion pouch." All pouches, without exception, originating from the pharynx must develop by pressure (pulsion), whether congenital or acquired, but some develop through air pressure alone, and others by food pressure combined with air pressure. The evidence that it was not congenital but acquired, and caused by food pressure, or ever at any period contained food, is wanting, though possibly this may have been so, as also may have been the case in the St. Thomas's Hospital specimen, which was figured by Butlin in his communication to the Royal Medical and Chirurgical Society in 1893. I showed a slide of this to illustrate my paper at Nottingham. I admit an element of doubt as to these two cases being pure aeroceles, because of their wide orifices, though their lateral position obviously suggests a congenital branchial origin.—I am, etc.,

London, W.1, March 26th. WILLIAM HILL.

*** Although we had considered that this correspondence had come to a natural end, we feel bound, in justice to Dr. Hill, to publish the above letter, and Sir J. Dundas-Grant adds an interesting reminiscence. We cannot undertake to publish other letters on the same subject.

INFLUENZA AND ALBUMINURIA OF PREGNANCY.

SIR,—Mr. R. H. Paramore, commenting in your issue of March 26th (p. 596) on Dr. Gutch's suggestion (BRITISH MEDICAL JOURNAL, March 19th (p. 543) that influenza and the albuminuria of pregnancy stand to one another in the not improbable relation of cause and effect, brings forward a very ingenious mechanical explanation for the cause of the albuminuria when it affects pregnant women during the influenza epidemics, but, unfortunately for his theory, it is based on two wrong assumptions at the outset—namely: (1) That, as Dr. Gutch says, "the pregnant woman only is affected in this way," and (2) that a "terrible cough" (as Mr. Paramore says) is present in these cases. Now, any general practitioner who has a wide experience of influenza knows that not only pregnant women, but non-pregnant women, men, and children of both sexes and all ages are "affected in this way"—that is, are liable to renal complications during the influenza epidemics or, indeed, at any time following an attack of influenza. The following extract from an essay on "Influenza in general practice," which I wrote about eighteen months ago, may be of interest.

> "I have noted during the epidemics and in the intervals many cases of pyelitis which were undoubtedly due to influenza; as I am writing this I have a small epidemic of pyelitis, and every case can be attributed to a definite influenza with sore throat, which occurred about fourteen days before the onset of the renal symptoms; it is much more common for the tonsillar cases to be so complicated than those with pulmonary symptoms. I have noted, too, far too frequently for the matter to be considered a coincidence, that pregnant and puerperal women show a decided tendency to pyelitis during the epidemics, and I am convinced that the pyelitis of pregnancy is sometimes influenzal. . . . There is no doubt in my mind of the existence of an influenzal nephritis; I have seen many cases; here, again, the influenza with sore throat is most commonly antecedent."

These statements were based on a study of over 1,700 cases which had been on my visiting lists, and subsequent experience of many more hundred cases has more than justified my remarks. Like Dr. McDougall, I am "surprised that this is not more generally recognized."

Mr. Paramore, however, may not be satisfied with my experience, so I refer him to a short article by Peace (BRITISH MEDICAL JOURNAL, January 2nd, 1926, p. 17), who described some cases of "nephritis following tonsillitis," and another by Cook (BRITISH MEDICAL JOURNAL, December 11th, 1926, p. 1118), on some cases of "acute haemorrhagic nephritis following influenza." There is no mention of pregnant women in either article.

I hope, therefore, that Mr. Paramore will recognize that there are two fallacies in his argument: (1) That the nephritis is not confined to pregnant women. (2) That nephritis follows influenza oftenest when there is no cough, and therefore is *not* the "enormous rise of pressure in the abdomen" of which Mr. Paramore speaks.

I remember seeing in consultation in February, 1923—when influenza was fairly prevalent—a woman in the puerperium who had a high temperature which had failed to react to the uterine douche applied on several occasions. I suggested that the fever was renal in origin, and a microscopical examination of the urine showed it to be teeming with *B. coli*. Potassium citrate brought down the temperature promptly. I also remember an infant of 10 months whom I had seen in my surgery with an influenzal tonsillitis, developing pyelitis a week later; the mother and father were down with influenza at the same time. Here again the condition cleared up with potassium citrate. One reads much of pyelitis being mistaken for influenza. Though the renal changes are often overlooked, they often follow influenza. The influenza germs or toxins must have an effect on the kidney and render it vulnerable to attack by the germ which is constantly in the vicinity—the *B. coli*.

I am not so sure that, as we become more enlightened, we will not find that accidental haemorrhage, eclampsia, etc., are due to the invasion of the body by extraneous organisms of the influenza family, and that there will not come a time when it will be no longer considered old-fashioned to make a diagnosis of influenza during the puerperium. Browne's recent work on placental infarction in connexion with accidental haemorrhage has paved the way for other observers.

A case of that rare complication—suppression of urine after labour—which I reported in the BRITISH MEDICAL JOURNAL of April 14th, 1923 (p. 630), puzzled me at the time. I found out later that I had attended the woman's father in the same house during the same week for influenza with severe delirium and that the puerperal pyelitis case mentioned above was seen in that week. Were these coincidences? I am inclined to think now that influenza had something to do with the suppression.

I suggest that a far more reasonable explanation than Mr. Paramore's of these cases is that they are embolic. I have seen two cases in the last twelve months of nephritis following influenza in which pulmonary infarction followed the nephritis. There is, of course, no reason why the pregnant woman should not be "affected in this way."—I am, etc.,

Aberdare, March 28th. AMBROSE W. OWEN.

SIR,—Mr. Paramore (BRITISH MEDICAL JOURNAL, March 26th, p. 596) attributes the relation between influenza and albuminuria in pregnancy to pathological intra-abdominal pressure. But surely the large bed of fat in which the kidney lies is sufficient to act as a shock absorber. I am quite ready to allow that in pertussis albuminuria is fairly frequent, but naturally most of the observations have been made in children, in whom the fatty bed is not so well developed. Normally great changes occur in the blood during pregnancy—for example, the great reduction in the suspension stability of the red blood corpuscles. It is not unreasonable to expect that the further changes provoked by an infection with the influenza bacillus will occasion such a degree of condensation in the protein particles of the blood[1] that the glomerular membranes will permit the altered protein particles to pass through into the urine.—I am, etc.,

Bristol, March 28th. FRANK BODMAN, M.B.

SPORADIC DYSENTERY IN ENGLAND.

SIR,—The very interesting account in the JOURNAL of March 26th (p. 563) of outbreaks of bacillary dysentery prompt us to send a brief note of a similar small epidemic which occurred three weeks ago in an institution under our medical charge.

[1] McDonagh: *The Nature of Disease*, vol. i, 193.

The outbreak occurred, fortunately, in a small group of children who were at the time isolated in the sanatorium of the institution on account of whooping-cough. The first case, a boy of 4, started with a temperature of 102° F. and profuse diarrhoea, with green stools. In the course of a few hours this changed to blood and mucus. The tenesmus was very severe, and the child was passing small portions of blood and mucus about every twenty minutes. Treatment consisted of a preliminary dose of castor oil and subsequently small doses of Dover's powder. Two days afterwards two other children of the same group developed it, and two days later another two, and two adults who had been in contact with the sanatorium had slighter attacks. The original case is still passing occasional mucus, but all the other cases cleared up in a week. They all started with temperatures of 102° to 103° F. In the case of the youngest children the treatment as in the first case was adopted, and with the older and adults magnesium sulphate was given every two hours, until the motion became normal.

Immediately on the onset of the outbreak the sanatorium was strictly isolated from the main building. All motions were disinfected, and a kitchen was established for the use of the sanatorium alone. No fresh cases occurred either in the sanatorium or in the main building. In view of the possibility of the organism being dysenteric, specimens of the motions were sent direct by car, forty miles, to the nearest laboratory. Four of the cases gave a culture of *B. dysenteriae* "Y." In regard to the origin of the outbreak, water and milk were excluded, and no food had been consumed in the sanatorium which was not common to all the institution.

The matter is still under investigation, but two possible sources have been determined. (1) A visitor to the institution proves to have just returned from abroad convalescent from dysentery, although the type has not yet been discovered. This visitor was in close contact with the original case. (2) The original boy was born and spent nearly two years in India. He may prove to be a carrier.

We should like to express our indebtedness to Dr. J. J. Day, medical officer of health, Eastry area, and Dr. Ponder, Kent county pathologist, for their valuable help in dealing with this outbreak.—We are, etc.,

N. MCCALL-SMITH,
D. M. M. FRASER.

Eastry, Kent, March 26th.

BREATHING EXERCISES WITH MOVING ARMS.

SIR,—Mr. R. H. Paramore, F.R.C.S., in his letter (March 19th, p. 542), commenting on my article (March 5th, p. 422), asks, "Can the doctrine of the reciprocal innervation of antagonistic muscles stand?" This doctrine is generally accepted, and I personally find evidence of it in the healthy man in physical training.

The tension in the opposing muscles described by Mr. Paramore is due to the contraction of the plastic element in the muscle, consisting of the thin muscle fibres of a voluntary muscle innervated by the sympathetic non-medullated nerves, and has nothing to do with the contractile element, which consists of the thick fibres of the muscle innervated by the somatic medullated nerves. The plastic element is merely postural, and does not oppose.

Pulling on the arms in artificial respiration cannot very well be an illustration that movements of the arms raise the ribs, for in this case the arms are passively moved, whereas I speak of actively moving arms. Even in this case artificial respiration depending on passive movements of the arms has been given up for better and more efficient methods.

The only time when the muscles attached to the chest and arms can raise the ribs is when the arms are fixed.

Even if it was granted that movements of the arms created a slight pull which elevated the ribs, the amount could only be negligible, in view of the other detrimental factors to breathing pointed out in my article which occur when the arms are moved. The arms should not be moved during breathing exercises.—I am, etc.,

Portsmouth, March 22nd. HORACE HILL, M.R.C.P.

Obituary.

LOUIS HEMINGTON PEGLER, M.D.ED., M.R.C.S.ENG.,

Consulting Surgeon, Metropolitan Ear, Nose, and Throat Hospital.

THE death of Mr. Louis Hemington Pegler on February 26th, in his seventy-fifth year, has removed one who had held a leading place among otologists and laryngologists.

Mr. Pegler received his medical education at University College, London, and Edinburgh. He graduated M.B., C.M.Ed. in 1878, obtained the diploma M.R.C.S.Eng. in the following year, and proceeded M.D. in 1885. After ten years' service as surgeon to the Clay Cross Colliery Company at Alfreton, he came to London in 1892 to study otology and laryngology. He held the posts of registrar and pathologist to the Central London Throat, Nose, and Ear Hospital from 1893 to 1895, and in 1896 became surgeon to the Metropolitan Ear, Nose, and Throat Hospital, remaining on its staff until 1921, and contributing greatly to its progress. He was honorary consulting laryngologist and otologist to the London College of Music and several other institutions. During the war he acted as surgeon in charge of the ear and throat department of the Mile End Military Hospital. He joined the Laryngological Society of London in 1893, and was later a member of its council. He was secretary of the British Laryngological and Otological Association for three years, and took a prominent part in organizing its international meeting in 1895. He was a Fellow of the Royal Society of Medicine, and had been vice-president of its Laryngological Section. Mr. Pegler was actively concerned in the organization of the Laryngological Section of the International Medical Congress in London in 1913; he was a member of its council and curator of the laryngological museum in connexion with it. Ill health compelled him to retire from practice in 1921, and obliged him to decline the presidency of the Laryngological and Otological Section of the Annual Meeting of the British Medical Association, which he was offered in that year.

He published in 1900 a short monograph on nasal obstruction, and among his other contributions to literature were an article on the pathology of treatment of discrete angioma of the nasal septum, and the elaborate "Map scheme of the trigeminal nerve and its connexions," in which he defined its exact ramifications and anastomoses; this was published in 1913.

He was a great lover of classical music, being particularly interested in the works of Beethoven and Bach. He was also an enthusiastic naturalist, giving attention to botany, geology, and archaeology, and possessing an expert knowledge of mosses and flint instruments. His collections are preserved in the Natural History Museum and the South London Institute. He is survived by his widow, a daughter of the late Mr. Francis Palmer of Bedford.

JAMES LUKE, M.B., C.M.ED.,

Surgeon, Northern Infirmary, Inverness.

THE death took place at Inverness, on March 24th, of Dr. James Luke, after five days' illness from pneumonia. Dr. Luke was born in Fifeshire, and studied medicine at the University of Edinburgh. During his undergraduate days he was a well known athlete, being noted as a boxer, and being captain of the University Cycling Club at a time when cycle racing was a widely practised form of sport. He graduated M.B., C.M. at Edinburgh in 1889.

Immediately after graduation, he acted as house-surgeon to the late Professor Annandale, and afterwards proceeded to Glasgow, where he was house-surgeon to Sir William Macewen. Subsequently he was appointed to the surgical staff of the Royal Hospital for Sick Children in Glasgow, and became an assistant surgeon in the Glasgow Royal Infirmary, where he was attached to the wards of Mr. J. Hogarth Pringle. During the South African war he served with the 2nd Scottish National Red Cross Hospital, which was organized largely from Glasgow, and on his return to this country he was one of those who received the freedom of Glasgow for their services. In 1907 he

went to Inverness, where he built up a large practice, working particularly as a surgical specialist. At the same time he was appointed one of the visiting surgeons at the Northern Infirmary, Inverness, which he served for twenty years, and where he gained a reputation as one of the chief surgeons in the North of Scotland.

Dr. Luke in his spare time was a noted sportsman, being regarded as a first-class shot, and he was also a keen angler in many of the rivers of the North of Scotland. He is survived by a widow, two sons, and two daughters.

THE LATE DR. JOHN BROWNLEE.

DR. A. FREELAND FERGUS (Glasgow) writes: With reference to your very appreciative and excellent article on the late Dr. John Brownlee, contained on page 598 of your issue of March 26th, I have to say that Dr. Brownlee had conferred upon him not the Fellowship of the Royal Faculty of Physicians and Surgeons, but the Honorary Fellowship, an honour very seldom bestowed by the Faculty. At the time of its being conferred I happened to be the president, and therefore I have taken the liberty of communicating this information to your readers.

Dr. ARTHUR GODFREY WILKINS, who died on March 9th, at the age of 50, was the second son of Professor A. S. Wilkins of Victoria University, Manchester, and received his medical education at Owens College, Manchester, and Dublin. He graduated M.B., Ch.B.Vict., with honours, in 1900. After serving as house-surgeon to the late Mr. F. A. Southam, at the Manchester Royal Infirmary, he became senior resident medical officer at the Salford Union Infirmary, from which he went to Manchester as resident medical officer of the St. Mary's Hospital for Women and Children. He then began to practise at Patterdale, on the shores of Ullswater, which involved long daily journeys of more than forty miles. On one of these he was accompanied by the late Sir Robert Morant, who thus obtained an insight into the question of mileage for country doctors. During his twelve years in Patterdale Dr. Wilkins was appointed justice of the peace for Westmorland. At the outbreak of war he disposed of his practice and, after spending some time with the French, received a commission in the R.A.M.C., serving in France and in German East Africa. In 1918 he was appointed a bimbashi in the Egyptian Army, but did not go to Egypt, as the war ended immediately after his appointment. On leaving the army he became chief school medical inspector for the Staffordshire County Council, and was responsible for the establishment of over thirty school clinics and infant welfare centres within eighteen months. Into this work he threw an immense amount of energy and enthusiasm. He subsequently spent two years as a ship surgeon, visiting China and the East Indies, and held the posts temporarily of superintendent of the Staffordshire Infirmary at Prestwood and of the Cheshire Joint Sanatorium at Market Drayton. His last appointment was that of medical superintendent of the Essex County Sanatorium, from which ill health compelled his resignation after about one year's service. Dr. Wilkins was a representative of the Mid-Staffordshire Division in 1921, and a member of the executive committee of the North Staffordshire Division 1923-24. A colleague, to whom we are indebted for the particulars given above, writes: Of fine physique, absolutely unassuming, and of great charm of manner, all classes of persons within ten minutes would be talking to Dr. Wilkins as if they had known him all their lives. He was one to whose kindness and common sense many appealed in times of trouble, and remembered his help with sincere gratitude.

Dr. CHARLES DRUMMOND MUSPRATT of Bournemouth, who died suddenly on March 10th, was born in India in 1859, the son of Mr. Henry Muspratt, I.C.S. He received his medical education at Guy's Hospital Medical School, took the diplomas of M.R.C.S.Eng. in 1884 and F.R.C.S. in 1885, graduated M.B., B.S.Lond. with honours in 1886, and became M.D. in 1889. After serving as house-surgeon at Guy's Hospital and assistant medical superintendent at St. Saviour's Union Infirmary he removed to Bournemouth for health reasons in 1891, and entered into partnership with Dr. J. Douglas. In 1892 he was appointed to the honorary medical staff of the Royal Victoria and West Hants Hospital, and in 1906 was appointed consulting surgeon. In 1919 he had a breakdown in health, which necessitated his retirement in the following year. For many years he was an active member of the British Medical Association, and was president of the Dorset and West Hants Branch in 1916. He was a member of the Ethical Committee of the Bournemouth Division from 1917 to 1923, and chairman of the Division during part of 1923. In 1892 he married the daughter of the Right Hon. Sir H. Knox; she died six years later, leaving three sons, one of whom was killed while serving in France in May, 1918, and another, who had won distinction in the Air Force by bringing down single-handed ten enemy aeroplanes, died through a crash at Martlesham, in March, 1918. Both the sons had been awarded the Military Cross. Dr. Muspratt himself rendered valuable assistance for two months during the war at the Allies' Hospital for French Soldiers at Yvetot near Rouen.

Dr. LEONARD SATCHWELL SMITH, who was killed in Nanking during the disorder consequent upon its capture by the Southern Chinese army, received his medical education at Birmingham and Newcastle-on-Tyne; he graduated M.B., B.S.Durh. in 1900. After holding the post of resident house-surgeon at the Queen's Hospital, Birmingham, he practised for some time in Kobe, Japan, and then moved to Nanking sixteen years ago as medical officer of the Tientsin-Pukow Railway. He also engaged in private practice in Nanking, and was very popular among the Chinese. In 1912 he married Miss May Williams, who with other refugees has reached Shanghai safely.

Universities and Colleges.

UNIVERSITY OF OXFORD.

Fellowship Election at University College.

ARTHUR DUNCAN GARDNER, M.A., M.D., University College, F.R.C.S., has been elected to a special supernumerary Fellowship at University College. Dr. Gardner, who was elected to the Radcliffe Travelling Fellowship in 1914 and was awarded the Radcliffe Prize in 1923, is engaged in research in the Department of Pathology and is bacteriologist-in-charge of the Standards Department under the Medical Research Council.

Radcliffe Travelling Fellowship.

The Electors have notified to the Master and Fellows of University College the election, on March 7th, of Thomas Cecil Hunt, M.A., B.M., of Magdalen College, to a Fellowship on the foundation of Dr. John Radcliffe. Mr. Hunt was an open scholar at Magdalen College, who obtained the Theodore Williams Scholarship in Human Anatomy in 1922, the Theodore Williams Scholarship in Pathology in 1924, and the Radcliffe Scholarship in Pharmacology in 1924.

Radcliffe Prize.

Bernard Warren Williams, M.A., B.M., Exeter College, F.R.C.S., has, on the report of the examiners, been elected by the Master and Fellows of University College to the Radcliffe Prize for a thesis entitled "The importance of toxaemia due to anaerobic organisms in intestinal obstruction and peritonitis."

UNIVERSITY OF LONDON.

MR. W. E. LE GROS CLARK, F.R.C.S., has been appointed, as from September 1st, 1927, to the university chair of anatomy tenable at St. Bartholomew's Hospital Medical College, where he has been university reader in anatomy since the beginning of 1924.

Dr. Hamilton Hartridge, F.R.S., has been appointed, as from September 1st, 1927, to the university chair of physiology tenable at St. Bartholomew's Hospital Medical College. He holds the M.A., M.D., and Sc.D. degrees of the University of Cambridge, is a Fellow of King's, and, since 1919, has been lecturer on organs of special sense and senior demonstrator in physiology at the Cambridge physiology laboratories.

UNIVERSITY OF LIVERPOOL.

THE following candidates have been approved at the examinations indicated:

FINAL M.B., CH.B.—*Part I*: *R. K. Bowes, Gladys A. Coventry, J. H. St.B. Crosby, A. Dala, H. R. Dugdale, R. A. Furniss, K. Jhami, E. W. Jones, Mary G. Jones, T. Lotter, Hilda M. C. MacMahon-Garry, J. S. Mather, G. W. Molyneux, Elizabeth B. Robson, J. L. A. Webster, F. J. Welton. *Part II*: I. Lipschitz.

DIPLOMA IN MEDICAL RADIOLOGY AND ELECTROLOGY.—G. Friedland, R. W. Gemmell, T. Harrison, Agnes B. MacGregor, A. M. Robertson.

* With distinction.

UNIVERSITY OF ABERDEEN.

AT the graduation ceremony on March 23rd the following degrees and diplomas were conferred:

LL.D. (*honoris causa*).—Matthew Hay, M.D., LL.D., professor of forensic medicine in the University of Aberdeen, 1883 to 1926; medical officer of health for the city of Aberdeen, 1888 to 1923.

Sir Frederick Gowland Hopkins, M.A., D.Sc., F.R.C.P., F.R.S.; Sir William Dunn professor of biochemistry in the University of Cambridge.

Sir William Milligan, M.D., C.M.; lecturer on diseases of ear and throat, Manchester University, and consulting aurist and laryngologist, Manchester Royal Infirmary.

D.Sc.—Lieut.-Col. Ander on Gray McKendrick, M.B., Ch.B., F.R.C.P.Ed.

M.D.—*Philip Hayer (commended for thesis).

M.B., B.Ch.—*W. Marshall. *A. S. Paterson, G. J. Allan, A. W. Badenoch, J. Barclay, Catherine I. A. Craig, J. G. H. Davidson, R. G. Dingwall, P. T. J. Doss, A. D. Duff, G. A. P. Fraser, J. M. C. Gill, J. Leiper, J. W. Lobban, †N. J. Logie, †H. G. McPherson, C. P. Mann, N. G. Marr, J. R. Moir, J. H. Otty, Mary Riddoch, C. C. Ross, C. G. Walker, L. G. Walters.

D.P.H.—Jessie R. G. Dingwall, J. Innes.

* With second-class honours.
† Completed final medical examination with distinction.

UNIVERSITY OF GLASGOW.

THE University proposes to confer at the June graduation the honorary degree of LL.D. upon Sir Charles Ballance, K.C.M.G., C.B., consulting surgeon to St. Thomas's Hospital, London, and to the National Hospital, Queen Square.

SOCIETY OF APOTHECARIES OF LONDON.

THE following candidates have passed in the subjects indicated:

SURGERY.—J. de Rosa, J. A. Fernandez, R. Kahn, A. M. A. Moore, R. C. Pratt, S. Slotar, W. G. H. Warner.

MEDICINE.—G. W. Ayres.

FORENSIC MEDICINE.—G. W. Ayres, A. C. F. Barrow, L. J. Lawrie, G. C. Rhys Jones, H. N. Walker.

MIDWIFERY.—A. C. F. Barrow, W. H. Collins, L. J. Corbett, S. Goldman, H. H. Lakin, W. D. Neill, S. le B. Switzer.

The diploma of the Society has been granted to Messrs. G. W. Ayres, A. C. F. Barrow, J. de Rosa, R. Khan, and H. N. Walker.

Medical Notes in Parliament.

[FROM OUR PARLIAMENTARY CORRESPONDENT.]

AT the meeting of the Parliamentary Medical Committee on March 23rd, Dr. Fremantle presiding, Dr. Roche, an Australian practitioner who had worked with M. Spahlinger at Geneva, gave particulars of cases he had seen under the Spahlinger treatment for tuberculosis. His account of the results was very disappointing, though he would not say that no benefit had been done, and he cast no reflections on M. Spahlinger's personal sincerity. Dr. Roche's evidence conflicted with that of those members of the Parliamentary Medical Committee who had visited M. Spahlinger last year, and his statement was followed by a brisk discussion. During this Dr. Watts and Dr. Vernon Davies declared that they held to the opinions they had formed when they visited M. Spahlinger, and that if they were to be attacked themselves by tuberculosis they would go to him for treatment.

The Medical Committee decided that the urgency for an open lecture to members of Parliament on vaccination and small-pox had disappeared now that Dr. Watts no longer had a good chance to raise the question of vaccination when the House of Commons went into committee on the Civil Service Estimates. The lecture, consequently, was postponed *sine die*, but the Medical Committee considered that in view of recent public discussion on vivisection and the British Medical Association conference to be held on the subject on April 4th, it was desirable to invite all members of Parliament to a lecture on experiments on animals after Easter. Lord Dawson of Penn attended this meeting of the Medical Committee, and it is hoped that he will arrange to deliver the suggested lecture to members of Parliament early in May.

The medical profession has, unfortunately, lost the services of Dr. Haden Guest in the House of Commons. He was elected in the Labour interest for North Southwark in 1923, but, finding himself in disagreement with the policy of that party in respect of events in China, he resigned his seat and was not successful in the by-election, when the constituency was carried by a member of the Liberal party.

At a meeting of the Unionist Associations of the four Scottish Universities, on March 28th, Mr. John Buchan was chosen as a candidate for the vacancy in the parliamentary representation of those universities caused by the death of Sir Henry Craik. Mr. Buchan has accepted the invitation to stand "as a loyal follower of Mr. Baldwin, and believing his creed of voluntary evolution offers the best help for the country."

The House of Commons this week passed the Consolidated Fund Bill, agreed to the Lords amendments on the Poor Law Emergency Provisions (Scotland) Bill, and took the Committee stage of the Army and Air Force Annual Bill. During discussion on the last measure debate arose on the retention of the death penalty in the army for desertion and cowardice in the field. The Nursing Homes Bill, introduced by Mrs. Philipson, was down as second order of the day for April 1st. Debates also arose on the supersession of the elected guardians at Chester-le-Street, and on the encouragement of rural craftsmanship.

Physically and Mentally Defective Children.

When the second reading of the Consolidated Fund Bill opened, on March 24th, Mr. Trevelyan, on behalf of the Labour party, began a debate on education. He complained that when the Minister of Health revised the code of regulations governing elementary schools he had swept away all detailed building regulations, all special requirements as to floor space, playground space, and lavatory accommodation, and had left local authorities to build as they pleased. There were 623 schools which had been absolutely condemned, but not replaced, and 160,000 children in them. Mr. Morrison called attention to the provision made for educating subnormal children. In the case of blind or partially blind children, 2,408 out of 4,694 who in the opinion of the Board of Education might benefit from admission to special schools were either in public elementary schools or attending no school at all. Out of 4,154 totally deaf children in England and Wales, 319 attended ordinary schools. Of 2,170 partially deaf children, 1,632 were in ordinary schools, and 80 not in any school. The Board of Education showed 142,889 physically defective children, including cripples, those suffering from tuberculosis, and those requiring open-air schools. Of them, 94,332 were in public elementary schools, and 18,931 not in any school. Out of 33,000 mentally defective children, 12,470 were attending elementary schools who should not be there. There were 3,872 who were educable, but attending no school, and 110 education authorities had made no provision for teaching mentally deficient children. The Minister of Health had issued a circular saying: "It would not seem prudent to incur heavy expenditure at the present moment on new schools for such children or on enlargements of such schools." Yet the records of the existing schools showed that between 60 and 70 per cent. of the children who passed through these schools were at work two years after leaving them. In England and Wales on March 31st, 1926, accommodation was only provided for 17,154 educable mentally deficient children—about half the accommodation required. A committee on the education of mentally defective children had been sitting for two and a half years. It must be near the end of its labours. Why had the Minister intervened to advise against the construction of special schools? It was nonsense to suggest that the situation could be met by increased zeal on the part of the school medical services in ascertaining children with these disabilities. Lord Eustace Percy intervened to say that what he had declared in a circular was: "It will be understood that the Board do not underrate the value of special schools, but . . . the completion of the school medical service would appear to be of primary importance." Mr. Morrison retorted that the doctor, so far as mentally defective children were concerned, could never do the work of the teacher.

Replying to the debate, Lord Eustace Percy said the explanation of the number of blind children not attending special schools was either the unwillingness of the parents to have their children placed in such schools or the fact that the children had reached an age where the obligation to attend such schools no longer held good. In London there were a large number of physically or mentally defective children whom they could easily classify and bring together into special schools. But the main problem was in the areas where there were only a few defective children, who could only be dealt with by having a class somewhere in connexion with an elementary school, or by sending them to a residential institution. Members who had been to mentally defective schools in parts of the country other than London, and had seen the mixture in one room of widely differing grades and types of mental defectives, must have asked whether it was good for these children to be altogether. Were the Board to use its powers of compulsion with regard to mentally defective children, and dealt with them wrongly, that would be worse than not dealing with them at all. The Board was now for the first time about to present the country with the settled programmes of local authorities, and on these programmes arose the question whether a number of new schools for the mentally defective were to be built. From the beginning of last May the whole work of school building and of placing contracts for school buildings had been seriously affected by industrial disputes. Mr. Morgan Jones referred to the death rate of children under 5, and said some provision should be made to bring children at 4 or 5 into some form of nursery school where their physique as well as their moral training might be looked after. Dr. Menzies, the medical officer of the London County Council, had reported 10,000 children who were or had been suffering from rheumatic symptoms. Having regard to the effects in later life of this disease, there was a strong case for intensifying the medical service attached to educational work throughout the country. The Duchess of Atholl said everyone who had read the last report of the Board's principal medical officer must feel grave concern at the figures there given on the health of children under 5. Nursery schools were doing splendid work in improving the health of small children. Children suffering from heart trouble caused by rheumatic infection were to an increasing extent being admitted to schools for the physically defective. In some areas, thanks to the provision of orthopaedic treatment for the crippled child, increasing space was being found for rheumatic children or for

children who had affected hearts in schools originally intended for crippled children.

The Duchess of Atholl, on March 28th, informed Mr. Harris that the committee on the education of mentally defective children included among its members a Commissioner of the Board of Control, as well as other persons with special knowledge and experience of the subject. The committee had not decided whether to invite evidence.

The Scottish Midwives and Maternity Homes Bill.

A Standing Committee of the House of Commons commenced on March 29th to consider the Midwives and Maternity Homes (Scotland) Bill. Mr. Maxton moved that the section forbidding an uncertified woman to attend women in childbirth should be limited by the phrase "habitually or for gain." He suggested that if this proviso were not inserted any woman who went to aid a neighbour in childbed in the middle of the night when a doctor or nurse could not arrive for an hour or two might be convicted of an offence. Dr. Vernon Davies said such a woman would be completely covered by the provision exempting attendance in sudden or urgent necessity. Dr. Drummond Shiels, after referring to the high rate of maternal mortality in Scotland, suggested that Mr. Maxton's apprehensions would be met by a later amendment. Dr. Fremantle, as one who had administered the old Act in England for a dozen years, said that to prove "habitual" attendance a series of cases had to be adduced, and such a series meant an immense tale of suffering to mothers. In the past it had been almost impossible to get the immense mass of evidence required for the conviction of uncertified women who were practising. Mr. William Adamson said that unless the point made by Mr. Maxton was met an injustice would be done. The proposal of the bill reversed the criminal procedure in Scotland. Dr. Elliot said a point had been brought out in which the majority of the Committee felt that something should be done, and he thought that Mr. Barclay Harvey, who had introduced the bill, should assent to some concession. The position of those attending women in labour had always been specially restricted both in the law of Scotland and in that of other countries. To engage in medical practice without a qualification was not illegal, but to engage irregularly in midwifery was illegal. Mr. Westwood, a Labour member who had backed the bill, said it was not intended as a party measure. Mr. Barclay Harvey said he was ready to accept a further amendment in the name of Dr. Shiels which exempted the unqualified woman if "reasonable efforts were made to obtain the services of a person certified under this Act." Mr. Maxton said that all the untrained midwives who had been in the habit of maltreating the poor women of Scotland were now on the register. Dr. Shiels's amendment did nothing to meet the difficulty. The real trouble was poverty. Mr. Maxton's amendment was defeated by 26 to 12.

Dr. Drummond Shiels then moved his amendment. He said that in many areas in Scotland qualified persons were not available, even although a certain amount of medical assistance was provided by the Highlands and Islands Fund. The purpose of the bill was to see that every woman, however poor, received expert attention in childbed. As Mr. Maxton had said, there was a problem of poverty, but it was possible for any woman, however poor, to get qualified assistance without fees. No doctor, no nurse, no midwife could institute a prosecution under the bill. That would have to be initiated by a public official, the Procurator Fiscal. Mr. Barclay Harvey said there was no reason why Dr. Shiels's amendment should not be accepted. He suggested that it should be altered to read "or that reasonable efforts were made to obtain the services of a duly qualified medical practitioner or of a person certified under this Act." Dr. Shiels agreed, and the amendment was carried.

Mr. Maxton then objected to the proviso in the bill exempting medical students from the provisions against unqualified attendance. Dr. Elliot said that medical students might be a jesting race, but when they went to deal with a matter of life and death they did so with the fullest sense of responsibility. The bill provided that the whole weight of the General Medical Council would regulate the attendance of students in training on these cases. In the earlier cases the student would go with a trained practitioner. Later he would be on the telephone. Dr. Elliot remarked that his experience was that the student was too much disposed to call up his advisers in such cases. Mr. Westwood suggested that the proviso regarding students should be amended by adding "under the supervision of a properly qualified medical practitioner or midwife."

The Chairman, Sir Cyril Cobb, said that it was too late to put an amendment. Dr. Davies said the medical student had to do a minimum of twenty cases. Only towards the end of his course was he allowed to attend normal cases accompanied only by a nurse. If any abnormality occurred he had to report to the hospital at once. The student got his training gradually and the interests of the mothers were safeguarded. Mr. Adamson said an unqualified student was as great a danger as an unqualified woman unless under direct supervision. The Labour party would take the opportunity of the Report stage to deal further with this matter. Mr. Barclay Harvey said it would be wrong to take the responsibility off the General Medical Council and the Central Midwives Board. Dr. Elliot said there came a time in medical training when the trainee must feel the responsibility upon his shoulders. The student taking his twentieth case was as competent as the newly qualified practitioner taking his twenty-first. The clause was added to the bill. On the clause providing for compensation to midwives suspended to prevent the spread of infection, Dr. Davies moved to omit the proviso "if not herself in default." Dr. Elliot resisted the amendment, which was not pressed.

On Part II of the bill, dealing with the registration and inspection of maternity homes in Scotland, Dr. Drummond Shiels moved an amendment providing that sanitation be added as one of the grounds on which the local authority might refuse to approve premises for use as a maternity home. This was accepted. Dr. Elliot moved to provide that applicants should not be registered if "in the case of a maternity home which was not in existence at the commencement of this Act, the person having the superintendence of the nursing of the patients in a home is not either a qualified nurse or a certified midwife." This was also accepted. Further drafting amendments were made. Dr. Davies moved that for inspection purposes patients might be designated by numbers or initials. The chairman said that Mr. Barclay Harvey had a later amendment which provided that the records should only be open to inspection by qualified medical men. Dr. Davies agreed to await this amendment. Dr. Elliot moved to insert an amendment providing that records should be kept "in the case of each maternity home relating to (1) the persons engaged or employed at the home in attending on the patients or infant children; and (2) the patients admitted to the home; and (3) the infant children in the home." He emphasized the phrase "relating to." Widely drawn regulations would be made by the Scottish Board of Health, and would be laid on the table of the House. The Committee agreed to the amendment, and also to Mr. Barclay Harvey's amendment restricting inspection to officers who were medical practitioners.

Dr. Vernon Davies pointed out that the bill would enable local authorities to exempt institutions which were refuges for girls, and where confinements occasionally occurred, as well as hospitals. Dr. Shiels thought that there should be no exemptions. Mr. Barclay Harvey was willing to accept an amendment from Dr. Davies making the exemption run "any hospital or similar institution not carried on for profit and not used mainly as a maternity home." The amendment was accepted. Dr. Shiels moved that all such exemptions should be reconsidered annually by the local authority. Dr. Davies supported. An amendment for a similar purpose was moved by Mr. Barclay Harvey and accepted, Dr. Shiels's being withdrawn. Dr. Elliot moved a new definition, which ran: "'Qualified nurse' means a person registered in the general part of the register of nurses required to be kept under the Nurses Registration (Scotland) Act, 1919, or a person who had, before the commencement of this Act, completed a three years' course of training in a hospital which was during the period of her training or subsequently became a training school approved by the General Nursing Council for Scotland, or the General Nursing Council for England and Wales, or the General Nursing Council for Northern Ireland for the purpose of admission to the general part of the said register."

Dr. Elliot said that nurses registered in England could be added to the Scottish register by a simple arrangement. The section was added to the bill, and the bill was reported to the House.

Scottish Administration.

On March 23rd Sir John Gilmour moved the Reorganization of Offices (Scotland) Bill. He said that in the past the administration of Scotland had been conducted by a system of boards. The bill was to set up in its place a system of departments on the lines of the great departments which existed in England, such as the Ministry of Health. Under the existing system the Board of Health in Edinburgh had a number of advisory committees composed of unpaid outside people skilled in certain interests which came before the Board. Nothing in the bill would lessen the necessity or the opportunity for continuing such boards. Mr. William Adamson moved the rejection of the bill.

The debate was adjourned.

Alcohol and Flying Accidents.

Captain Garro-Jones asked the Prime Minister, on March 23rd, whether he had inquired into the rules governing consumption of alcoholic drink by flying officers, engineer officers, and mechanics during flying hours, and whether he had received any complaints of overwork by flying officers. Captain Garro-Jones explained that he made no charge of excessive drinking. Mr. Baldwin replied that as a suggestion had been made that the consumption of alcohol had some bearing on recent accidents he had made careful inquiries and had satisfied himself that the consumption of alcohol among Royal Air Force personnel in general, and officers in particular, was very small. He had also satisfied himself that there was no evidence that consumption of alcohol had caused or contributed to any accidents, and none that overwork by flying officers had been the cause of any accidents. Captain Garro-Jones insisted that in some cases moderate quantities of liquor had been consumed immediately before flights and that all scientific opinion held this to be a contributory cause of accidents. The Speaker observed that these were rather serious allegations.

In the House of Lords, on March 23rd, Lord Gorell called attention to the frequency of accidents in the Royal Air Force, and asked why aeroplanes were not fitted with gear to give the pilot warning when stalling was about to occur, and whether the Government was adopting any device to prevent petrol tanks from bursting into flames. The Duke of Sutherland, replying for the Government, said continual efforts were being made to reduce the number of accidents. Pilots were constantly under supervision by senior officers and the Royal Air Force Medical Service. The medical service was alive to the necessity of detecting any incipient physical unfitness, strain, or staleness before harm could be done. Training was progressive and not hurried, and pilots had on an average 100 hours' flying experience before they were posted to squadrons. In no single case had indulgence in alcohol been proved to have caused or contributed to an accident in all the years covered by the official statistics. The average wine bill of pupil officers at the training schools was well under £1 a month.

and that of squadron officers little in excess of the same figure. The anti-stalling gear had been found suitable only for some types of aeroplane. The department was making every effort to find a petrol tank which would give adequate security both in accidents and enemy action. A general policy had been adopted that all personnel in the air should carry parachutes. But only in collision, fire in the air, or aircraft failure at a height could the parachute be instrumental in saving life.

Detection of Tubercle in Milk.—Sir G. Hennessy, replying to Mr. Everard on March 29th, said that various investigations had been promoted during the past few years in the attempt to devise better methods for determining whether milk was tuberculous. One of these, undertaken jointly by workers at the National Institute for Medical Research and at the National Institute for Research in Dairying, made possible a considerable improvement of pre-existing methods. An account of this was published in 1925. Further search would be made for new means of attacking this difficult problem. The reference given by Sir G. Hennessy was as follows: S. R. Douglas and L. J. Meanwell, "A new method for the concentration of bacilli in tuberculous milk" (*British Journal of Experimental Pathology*, 1925, vol. 6, p. 203).

Tuberculosis Treatment.—In reply to Colonel Day, Mr. Chamberlain said the total expenditure in England and Wales on the carrying out of the approved schemes for the treatment of tuberculosis during the last three completed financial years, excluding capital expenditure, was as follows: For the year ended March 31st, 1924, £2,884,062; 1925, £3,034,600; 1926 (provisional figures), £3,157,879.

Light Treatment.—Sir Kingsley Wood, on March 28th, told Mr. Cadogan that the Minister of Health had no authority to make regulations whereby only qualified medical practitioners should be allowed to treat patients with the ultra-violet ray. In cases in which his approval was required to the installation of artificial light apparatus, it was made a condition of approval that the treatment would be given under the supervision of medical practitioners who had experience of this form of treatment. The Minister of Health was informed that a central clinic and training centre where doctors and nurses could be instructed in the use of actinotherapy in the treatment of disease, had been established in London. Mr. Cadogan asked whether actinotherapy could not be placed in the same category as dangerous drugs. Sir K. Wood replied that if a question were put down he would consider it.

Indian Medical Service.—On March 28th Earl Winterton informed Mr. Pethick-Lawrence that the Secretary for India had found it necessary to consult the Government of India further on the question of providing facilities for study leave to Indian officers who entered the Indian Medical Service by competitive examination in London. He hoped that an announcement could be made very soon. In the House of Lords, on March 29th, Lord Lamington asked the Secretary for India what steps were being taken to reconstruct the Indian Medical Service and to provide adequately for the medical needs of the people of India. The Earl of Birkenhead said that he had been in correspondence with the Government of India, which consulted the provincial governments with a view to the future organization of the medical service in that country. He had recently received from the Government of India its final proposals, and his comments on these were forwarded on February 17th. Pending receipt of a reply he was not in a position to give full details of the scheme which it was proposed to adopt. The cardinal features of it were: (1) the retention of the Indian Medical Service and the necessary war reserve of trained medical men; (2) the provision of European medical attendance for European officers of the Superior Civil Service and their families; (3) the creation of provincial medical services, recruitments for which would be carried out by the local Governments. He anticipated that it would be possible to bring the new scheme into operation at no distant date.

Disablement Pensions.—The Minister of Pensions states that 26,200 disablement pensions ceased in 1924, 16,150 in 1925, and 13,150 in 1926. Cases of a wound or sickness breaking out again after a disability pension has been stopped and the statutory year allowed for appeal has passed are comparatively rare and are met by provision of medical or surgical treatment in the course of which the Ministry can judge whether special action is required. Answering Sir Richard Barnett, Major Tryon said he could not give a free choice to the pensioner between metal and wooden artificial limbs, or in any other type of appliance. When the medical officer of the Ministry considered that a metal limb should be given it was issued. The statement that the Ministry was providing wooden stumps was untrue.

Palestine: Quarantine Station.—Mr. Amery, on March 28th, said that the High Commissioner for Palestine reported that there was now no mosquito breeding in the area within one and a half kilometres of the quarantine station at Haifa, and that no anopheline mosquitos had invaded the quarantine station from a swamp, which existed at that distance. Lord Plumer was advised that no more suitable and no healthier site than the present one could be found for the permanent quarantine station.

Sexual Offences and Young Offenders in Scotland.—On March 29th Sir J. Gilmour, replying to Mr. R. W. Smith, who asked if he proposed to introduce legislation dealing with the question of sexual offences against young persons in Scotland, said that he proposed to await the report of the Scottish Committee on Young Offenders now sitting, and to consider the two reports together. He had already taken action on recommendations of the committee which did not require legislation.

Notes in Brief.

On March 29th the Sale of Food and Drugs Bill, which has already passed through the Commons, was read the second time in the House of Lords.

The estimated daily cost of each occupied bed in an army hospital is 13s. 7d., of which 7s. 4d. is for staff and 2s. 6d. for patient's maintenance.

At the end of 1926 there were 99 licensed establishments for pasteurizing milk in England and Wales, and 591 other licensed establishments for the sale of such milk. For certified milk 120 producers' licences were current, for Grade A (tuberculin tested) 131, and for Grade A milk 258.

The Minister of Health does not propose to institute any inquiry into the physical, as opposed to chemical, methods of improving flour. He understands these methods are still experimental.

The Minister of Health has appointed a departmental committee to consider and to make recommendations on the Optical Practitioners (Registration) Bill, which is set down for second reading on May 13th.

Mr. Chamberlain is now considering a recommendation of the Royal Commission on National Health Insurance that the ordinary benefits of health insurance should be provided on a basis of mutual insurance to deposit contributors who, through the state of their health, cannot obtain admission to an approved society.

Commander Kenworthy presented, on March 23rd, a petition, signed by 15,286 persons, praying that vivisection be prohibited by law.

Sir P. Cunliffe-Lister states that the regulations respecting the standard of accommodation for seamen on board ship have not been revised since October, 1923.

Medical News.

THE College of Physicians of Philadelphia has arranged to commemorate the hundredth anniversary of the birth of Lord Lister on the evening of April 6th. The president, Dr. Hobart Amory Hare, will take the chair, and addresses will be given by His Excellency Sir Esmé Howard, K.C.B., the British Ambassador, and Dr. Astley P. C. Ashhurst.

SIR WILLIAM DE COURCY WHEELER presided over the annual meeting and festival dinner, in London, of the Irish Medical Schools' and Graduates' Association on March 17th; about 150 members and guests were present. Colonel G. A. Moore proposed the health of "The Guests" in a witty speech, and replies were made by Vice-Admiral Sir Frederick Field, Sir Squire Sprigge, and Dr. Bertram Watson. The toast of "The Association" was proposed by Dr. Kenneth Fraser, and Sir William Wheeler responded. The arrangements for the evening, which worked out very successfully, were made by the honorary secretary for the dinner, Dr. F. R. Holmes Meyrick.

AT the invitation of Mr. Comyns Berkeley twenty-eight personal friends met Dr. Russell Andrews at the Garrick Club on March 22nd to say farewell to him on his retirement to the country. The company included Mr. J. Banister, Dr. J. Barris, Sir George Blacker, C.B.E., Dr. Bellingham Smith, Mr. Victor Bonney, Mr. A. Bourne, Dr. Darwall Smith, Mr. S. Dodd, Dr. M. Donaldson, Dr. T. W. Eden, Dr. J. Fairbairn, Dr. J. Hedley, Mr. Eardley Holland, Dr. V. Lack, Dr. S. G. Luker, Sir Ewen Maclean, Dr. A. Palmer, Mr. F. Provis, Mr. Carnac Rivett, Sir Henry Simson, K.C.V.O., Mr. T. Stevens, Mr. Clifford White, Dr. A. Willett, Dr. J. Wyatt, and Sir Hugh Rigby, K.C.V.O., and Dr. Lewis Smith, who joined the London Hospital in the same year as the guest of honour. Dr. Eden proposed in most fitting terms the health, long life, and happiness of Dr. Russell Andrews, which was drunk with the greatest enthusiasm, after which Dr. Russell Andrews replied.

SIR ERNEST HATCH, K.B.E., presiding over the annual meeting of University College Hospital last week, referred to the increasing popularity of the infant welfare department, 100 clinics having been held during the year with an aggregate attendance of considerably over 5,000. Nearly 10,000 home visits had been paid by health visitors. The present accommodation was inadequate, and he suggested the conversion of a building at the back of the obstetrical hospital into a new infant welfare centre at the cost of £20,000. The number of in-patients in the hospital had increased by nearly 600 over the previous year.

THE Fellowship of Medicine has arranged to supply a comprehensive ticket for a general course of post-graduate work available at any of some fifty London hospitals for any period from one week to one year; the charges range from two to twenty guineas according to the period required, and the holder can thus plan a time-table in accordance with his special requirements. Owing to the Easter vacation the special courses arranged for April will not begin until the last week. The Royal Waterloo Hospital will provide a comprehensive course in medicine, surgery, and gynaecology. A series of eight lecture demonstrations on tropical medicine will be given on Tuesdays and Thursdays, at 2 p.m., at the

London School of Tropical Medicine, beginning April 27th. Dr. Heald will give a series of four lecture demonstrations on successive Wednesdays at the Royal Free Hospital, at 5.15 p.m., from April 27th. Copies of all syllabuses, the *Post-Graduate Medical Journal*, and the general course programme may be obtained from the Secretary of the Fellowship, 1, Wimpole Street, W.1.

A POST-GRADUATE course on infant care, for health visitors, nurses, midwives, superintendents of infant welfare centres, and others interested, will be held at the Infants Hospital, Westminster, from 6.30 to 7.30 p.m. on Mondays, from April 11th to June 27th. This course prepares for the post-graduate certificate of the National Association for the Prevention of Infant Mortality. The subjects include: breast-feeding; feeding of the toddler; common diseases of the skin in childhood; the early education and prevention of crippling; mental and subnormal children; the causes of ear, nose, and throat trouble in young children; diphtheria; sunlight treatment; summer diarrhoea; and the psychology of the toddler. Particulars may be obtained from the secretary of the association, Miss I. Colhoun, 117, Piccadilly, W.1.

THE Joint Tuberculosis Council has arranged a post-graduate course in tuberculosis in Copenhagen in May, under the supervision of Dr. Axel Reyn. The course will include the surgical treatment of pulmonary tuberculosis and the use of pneumothorax, tuberculosis of the eye and larynx, and an exposition of the Danish campaign against this disease. Members of the course will leave Harwich on May 7th and return there on May 21st; the approximate cost is estimated as £25. Further information may be obtained from the Honorary Secretary, Post-Graduate Courses, The Larches, Farnham Royal, Bucks.

AT the annual meeting of the Society for the Study of Inebriety (Alcoholism and Drug Addiction), to be held in the rooms of the Medical Society of London, 11, Chandos Street, Cavendish Square, on Tuesday, April 12th, at 4 p.m., a discussion on the Inebriates Act of 1898 will be opened by Dr. R. W. Branthwaite, C.B., late Commissioner on the Board of Control.

THE eighth Salon des Médecins for the exhibition of pictures, engravings, sculpture, and decorative art by members of the medical, dental, and veterinary professions and their families will be held in Paris from April 3rd to 12th. The organizing secretary is Dr. Paul Rabier, 84, Rue Lecourbe, Paris XV^e^.

THE Astley Cooper studentship at Guy's Hospital falls vacant on July 4th. The present value of the prize is about £150 per annum, with an additional sum of £50 for expenses. Some particulars are given in our advertisement pages, and further information can be obtained from Mr. C. H. Fagge, M.S., Guy's Hospital, S.E.1, to whom applications for the post must be sent by May 31st.

THE Ancoats Hospital in Manchester was founded in 1828 and it is proposed to hold centenary celebrations in August next year. An appeal is about to be launched for funds to construct a new ward containing a hundred beds at a cost of £100,000. The hospital already treats 20,000 accident and casualty cases annually although only a hundred beds are available; two new operating theatres are also required. The hospital is situated in one of the most crowded parts of Manchester, and the demands made upon it are great. Recent additions include a new nurses' home and an extension of the out-patients' department.

DR. WILLIAM EVANS THOMAS of Ystrad-Rhondda has been appointed sheriff for Merionethshire.

ON his retirement from the post of medical officer of health for Canterbury after fifty years' service Dr. Frank Wacher has been presented with an inscribed silver cigar and cigarette cabinet by the officers of the corporation.

DR. RICHARD EAGER, medical superintendent of the Devon Mental Hospital, Exminster, has been presented by the officers and staff with a silver salver to commemorate his twenty-one years' service in that institution.

WE have received a copy of the two hundredth volume of the *Deutsche Zeitschrift für Chirurgie*, the well known German surgical journal which was founded in 1872 by Karl Hüter and Albert Lücke. The volume, which consists of 866 pages, contains a preface and an obituary notice by the editor, Professor F. Sauerbruch of Munich, of the orthopaedic surgeon, Professor Georg Perthes of Wurzburg, with his portrait, thirty-seven original articles by leading German, Austrian, Hungarian, Swedish, Spanish, Greek, Dutch, and Finnish surgeons, and an index for vols. 191–200 inclusive.

AN international congress on goitre will be held at Berne at the end of September.

THE Bureau of the Far East at Singapore reports that for the week ending February 26th there were 18 cases of plague with 12 deaths, 66 cases of cholera with 53 deaths, and 452 cases of small-pox with 150 deaths.

Letters, Notes, and Answers.

All communications in regard to editorial business should be addressed to ***The EDITOR, British Medical Journal, British Medical Association House, Tavistock Square, W.C.1.***

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the BRITISH MEDICAL JOURNAL alone unless the contrary be stated. Correspondents who wish notice to be taken of their communications should authenticate them with their names, not necessarily for publication.

Authors desiring REPRINTS of their articles published in the BRITISH MEDICAL JOURNAL must communicate with the Financial Secretary and Business Manager, British Medical Association House, Tavistock Square, W.C.1, on receipt of proofs.

All communications with reference to ADVERTISEMENTS, as well as orders for copies of the JOURNAL, should be addressed to the Financial Secretary and Business Manager.

The ***TELEPHONE NUMBERS*** of the British Medical Association and the BRITISH MEDICAL JOURNAL are *MUSEUM 9861, 9862, 9863,* and *9864* (internal exchange, four lines).

The ***TELEGRAPHIC ADDRESSES*** are:

EDITOR of the BRITISH MEDICAL JOURNAL, *Aitiology Westcent, London.*

FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate Westcent, London.*

MEDICAL SECRETARY, *Mediacera Westcent, London.*

The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin*; telephone: 4737 Dublin), and of the Scottish Office, 6, Drumsheugh Gardens, Edinburgh (telegrams: *Associate, Edinburgh*; telephone: 4361 Central).

QUERIES AND ANSWERS.

HIGH ALTITUDES IN OLD AGE.

"M.B." asks: Is it advisable for a practitioner aged 74 to visit places of the altitude of Murren or Zermatt or to travel in the Dolomites? Quick ascent in a funicular railway has certainly caused some discomfort. Would the same thing apply to a more gradual ascent by rail or car?

*** We have referred this question to Dr. Leonard Hill, F.R.S., who has been good enough to reply as follows:

If a man's heart, blood vessels, and kidneys are in a healthy condition there is no reason why he should not go up to the Swiss resorts at altitudes of some 5,000 ft., even though he be 74 years old. If the rapid ascent in the funicular railway the whole way causes any discomfort let him break his journey half-way up for a night and so become acclimatized.

MORBID SHYNESS IN A CHILD.

DR. R. MACD. LADELL (Birmingham) writes in further answer to "K. H. G.": No psychological analysis is possible either with children or adults until the psychologist has ceased to be a "stranger." In this particular case it is probable that much preliminary time would have to be spent in getting on good terms with the child and in educating the parents, since their reactions to the child are probably faulty.

INCOME TAX.

Contributions to the Press.

"G. R. H." inquires whether a few occasional guineas earned by contributions to the press on (1) medical or (2) other subjects are liable to income tax.

*** We are of opinion that an isolated contribution might not be liable—though that is open to doubt—but it is clear that casual contributions extending over a period would create liability.

Depreciation of Motor Car.

"D." discussed the question of a depreciation allowance with the inspector of taxes about a year ago, who informed him that if he claimed "depreciation" no allowance would be made on the purchase of a new car and suggested that that claim be dropped. It has become probable that our correspondent will retire before he needs to renew his car, and consequently will never be in a position to claim renewal allowance, and he has therefore again raised the depreciation question. The inspector declines to allow any sum for years prior to 1927–28, but takes the annual depreciation into account as from the date of purchase of the car in computing the 1927–28 allowance. Is there any redress?

*** The depreciation is for the year of assessment, and it is an established principle that it must be calculated on the capital value as written down from the date of purchase. The inspector is therefore correct in putting the allowance at £49 for 1927–28. But we suggest that our correspondent has some prospect of success in pressing his claim to add to that sum the £68 and £58 referable to the years 1925–26 and 1926–27. It is true that where depreciation is allowed no claim for "cost of renewal" can hold good, but an "obsolescence" allowance is not excluded, and in this case would have been claimable if the car were replaced. The inspector was therefore not quite correct in saying that if

depreciation were claimed "no allowance could be made in the event of the purchase of a new car," and if our correspondent put it to him that his action in withdrawing his former claim was based on that advice, the inspector might—and we think probably would—agree to the resurrection of the old claim, or in the absence of such agreement it might be authorized by the Board of Inland Revenue.

LETTERS, NOTES, ETC.

BIBLIOGRAPHY TO LORD DAWSON'S ADDRESS PRINTED AT PAGE 607.

Auerbach, Siegmund: *Headache*, Oxford Medical Publications.
Brams, William A.: Abdominal Migraine. *Journ. Amer. Med. Assoc.*, January 7th, 1922, p. 26.
Brams, William, with Blitzste, N. Lionel: Migraine with Abdominal Equivalent. Ibid., March 6th, 1926, vol. 86, p. 675.
Bramwell, Edwin: Migraine. BRITISH MEDICAL JOURNAL, October 30th, 1926.
Buchanan, J. Arthur: The Abdominal Crises of Migraine. *Journal of Nervous and Mental Disease*, July-December, 1921, vol. 54, p. 405.
Cabot, Richard C.: *Differential Diagnosis*: Headache, p. 32.
Crookshank, F. G.: *Migraine and other Common Neuroses.*
Fawkes, Marmaduke: Migraine and Acetonuria. BRITISH MEDICAL JOURNAL, December 18th, 1926.
Goodhart, James Frederic: *Common Neuroses.*
Harris, Wilfred: *Neuritis and Neuralgia.* 1925.
L'Encéphale: Névroses. 1909.
Liveing, Edward: On Megrim, Sick Headache.
Moore, W. Cabell: The Causes and Differential Diagnosis of Headache. *Annals of Clinical Medicine*, vol. 4, August, 1925, p. 98.
Rupert, Mary P. S., and Wilson, Elizabeth E.: A Study of Migraine. *Amer. Journ. Med. Sci.*, vol. 157, p. 561.
Trotter, Wilfred: Headache. *University Coll. Hosp. Mag.*, June, 1926.
Yeatman, J. W.: Migraine and Acetonuria. BRITISH MEDICAL JOURNAL, January 1st, 1927. Migraine and Acetonuria. BRITISH MEDICAL JOURNAL, January 29th, 1927.

LIFE ASSURANCE AND TUBERCULOSIS.

DR. ROBERT CARSWELL (Wandsworth, S.W.18) writes: Mr. Ferris-Scott (JOURNAL, March 19th, p. 552) appears to me to have mistaken the scope of my suggestion that holders of a negative tuberculin test certificate should be accorded specially favourable terms for sickness and life assurance. My suggestion is only concerned at this stage with the public recognition of the broad general proposition that, in the case of holders of such negative certificates, the diminished risk of the multifarious mass of disease due to the mischievous activities of the tubercle bacillus does, in point of fact, merit a diminished insurance premium. Were this proposition generally endorsed by members of the medical profession the insurance companies could be relied upon to work out the figures. As to the question of subsequent infection, this certainly is possible, but individuals who were fortunate enough to obtain, at some trouble and expense, a negative certificate would, owing to their knowledge of the subject, almost certainly be specially on their guard against subsequent infection. A repetition of the test in a simplified form in, say, five years could be carried out without much trouble or expense, and, as a further point, any such subsequent infection would be detected at an early stage, when it could be comparatively easily dealt with. The commercial value of a negative tuberculin test certificate is generally recognized and utilized in veterinary work. Why not in human? The chief objection seems to be the probably small number of successful candidates; nevertheless, the proposition might usefully be included in an insurance company's list of additional advantages. By so doing the insurance company would tend to foster the ideal of a tuberculosis-free community, and assist in tackling the question at the right end.

OLD MEDICAL BOOKS.

THERE have been up to now few really outstanding rare medical books in the auction sales of the present season; indeed, few old textbooks have come to the hammer at all until recently. Just at present, however, there are some interesting volumes to be found in the auction catalogues. There are, for instance, M. Andry's *Orthopædia; or the Art of Correcting and Preventing Deformities in Children, Translated from the French* (1743); Peter Lowe's *Discourse of the Whole Art of Surgery* (1634—not the first or even an early edition, of course); Christopher Bennet's *Theatri Tabidorum Vestibulum* (first edition, 1654—a treatise on consumption and other wasting diseases); Sir T. Elyot's *Castel of Helth* (1541); Edmund Gayton's *Hymnus de Febribus* (first edition, 1653); these will have been sold before this note is published. In the two following sales at Messrs. Sotheby's, next week and the week after, are a few books of great rarity. Thus Christopher Wirsung's *Praxis Medicinæ Universalis; or a General Practise of Physicke . . . now translated . . . by Jacob Moran* (1598) is one of the only two copies known. Oswald Gaebelkover's *Boock of Physicke . . . nuely translated out of Low Dutch into Englishe by A. M.* (Dort, Isaac Caen, 1599) is one of three copies known. Almost as rare, and much more interesting, is Thomas Willis's *Cerebri Anatomæ; cui accessit nervorum descriptio et usus* (first edition, 1664, with 5 plates of the nervous system after Sir Christopher Wren). Besides these may be mentioned also Robert Grove's *De Sanguinis Circuitu ab G. Harvaeo invento*, 1685; Walter Charleton's Harveian Oration for 1705; Nicholas Monardes on Eastern Medicine, Venice, 1575; Nicander's *Theriaca; ejusdem Alexipharmaca*, Venice (Aldine Press), 1523; Gideon Harvey (senior) on *Smallpox and Malignant Fevers, with an exact Discovery of the Scorvey*, 1685; Thomas Fuller's *Pharmacopœia Extemporanea*, 1709; John Brown's *Elementa Medicinæ*, Edinburgh, 1784; and John Aitken's *Principles of Midwifery*, 1786.

THE DETERMINATION OF SEX.

DR. A. P. MURTZ (London, N.4) writes, with reference to the correspondence published in our issues of November 13th (p. 918) and December 18th, 1926 (p. 1205), as follows: I have touched upon this interesting problem in articles published in the *Medical Times*, August 5th, 1916, p. 465, and in the *Lancet*, September 1st, 1917, p. 368. I then mentioned, *inter alia*, that I would publish the result of my future clinical observations on the subject in due time. I stated then that there is no absolute reliance as to the time, pre- or post-menstrual, when male or female issue can be predicted, but judging by my own experience of observations on over 2,500 maternity cases, I think that, as a rule, pregnancies occurring immediately before menstruation produce females, and those within the first week after menstruation males. I have had the confidence of a great many married couples who had followed my advice as to time of coitus. When pregnancy occurs during the second and third week of the interval between the menses there is no probability of sex determination at all. Sex is determined at the moment of conception so that histological differentiation during development of the impregnated ovum leads us to nothing for our present purpose. It seems to me that logical deductions based on biological knowledge are the only means at our command of establishing some feasible data. Vitality of the spermatozoa or ova, as the case may be, is the only essential in determining sex. The survival of the fittest in the struggle for existence comes here into play. In hermaphrodites of the lower animals, although male and female organs are present on the same creature, passive self-fertilization never occurs. Active copulation with a second individual must take place. Even here it is the struggle of gametes of opposite sexes which determines the very existence of the individual. In man—the highest mammal—menstruation of the woman by shedding the intrauterine endothelial lining prepares a nidus for the ovum which becomes fertilized subsequently. But active congestion of the uterus precedes the menstrual flow exciting the ovaries to discharge their ova to meet the spermatozoa for fertilization, and, if conception happens, the latter occurs in the Fallopian tubes, there to remain until ready to descend into the fundus uteri. The menstrual flow does not then occur. At the time of the menses female activity is very great, probably surpassing that of the male—a female survives as the fittest. Coitus immediately after the flow, say within a week, if pregnancy ensues should produce a male. Ovulation may occur at any time during the menstrual interval, but it is less vigorous, and the product of conception should be a male. I can only speak of probabilities, but to me they are sufficiently convincing to advise my patients as to the times of sexual connexions. I have generally been satisfied with the result.

CHLORINATED DRINKING WATER AND PRESCRIBING AND DISPENSING.

DR. JAMES OLIVER (London, W.1) writes: I would like to draw attention to the fact that because it is to-day a common practice to chlorinate our drinking water by the use of chloride of lime and liquid chlorine that in prescribing and in dispensing in any mixture sodium bicarbonate or potassium bicarbonate the added water should be distilled. If the water specified or used is merely tap water, then slowly but surely insoluble carbonate of lime is thrown down and what happens to the soda or potassium it is impossible to say at present, as our knowledge of the chemical changes produced in conjunction with the carbonate of lime formation is scanty. Moreover, from a therapeutic point of view there is the question of the carbonate of lime present in the mixture to be considered. Possibly it may, when it enters the stomach, be converted into calcium chloride, or if the mixture containing the bicarbonate is taken by a patient suffering from gastric ulcer in any stage or degree the carbonate of lime may be harmful.

SIR JAMES CRICHTON-BROWNE'S ESSAYS.

MR. FRANK BELBEN, M.B., F.R.C.S. (Bournemouth), writes to recall the old adage, "Always verify your quotations." He is moved to do so by an error in a quotation from *Romeo and Juliet* (v, 3, 88) made in the course of a review last week of Sir James Crichton-Browne's essays. The lines in the Globe edition of Shakespeare are thus printed:

> "How oft when men are at the point of death
> Have they been merry! which their keepers call
> A lightning before death. . . ."

MEDICAL GOLF.

THE knock-out tournament of the Medical Golfing Society has now reached its semi-final stage. The following gentlemen are left in the competition: J. Cunning, E. N. Plummer, J. Everidge, and E. Playfair.

VACANCIES.

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 41, 42, 43, 46, and 47 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 44 and 45.

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page *107*.

THE COLLOSOL SERIES

COLLOSOL

Manganese

(CROOKES)

"A very remarkable addition to our equipment for dealing with suppurative processes."

BRITISH MEDICAL JOURNAL, 1920. II. p.745.

Indicated in boils, carbuncles and all deep-seated coccogenic affections.

Special attention is drawn to the advantages of the oral product where injections are inadvisable.

The CROOKES LABORATORIES

(BRITISH COLLOIDS LTD.)

22, CHENIES STREET, LONDON

Telegrams Colossally, Westcent, London. **W.C.1.** *Telephone* MUSEUM 3663·3697·5757.

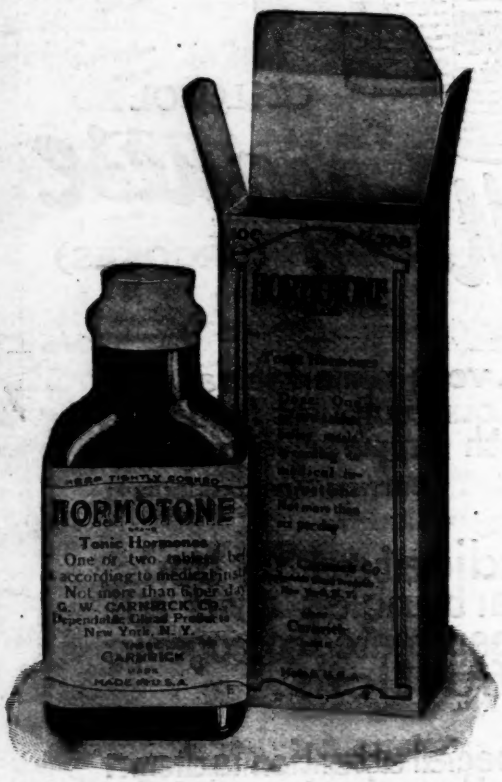
HORMOTONE

in disorders of the

CATAMENIA

and the

MENOPAUSE



Hormotone supplies the physiological stimulus to the endocrine glands, whose functional activity determines the normal catamenial flow.

When these internal secretions begin to fail at the period of the menopause, Hormotone acts both by substitution and homostimulation.

Dose: One or two tablets three times daily.

In cases of high blood pressure use

Hormotone Without Post-Pituitary

G. W. CARNRICK CO.

417-421, Canal Street, New York.

Dependable Gland Products.

London Agents: BROOKS & WARBURTON Ltd., 40-42, Lexington Street, W.1.

***Specify*—CARNRICK** (TRADE MARK).

Printed and published by the British Medical Association, at their Office, Tavistock Square, in the Parish of St. Pancras, in the County of London.